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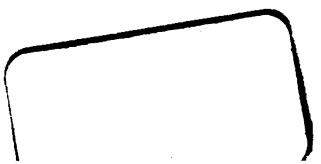
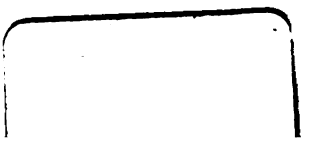




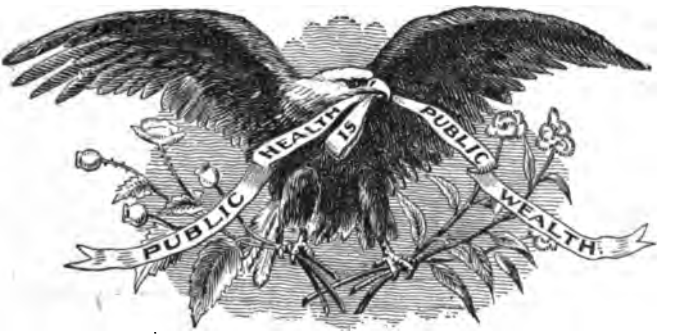
THE

SANITARIAN.

A MONTHLY MAGAZINE

DEVOTED TO THE

PRESERVATION OF HEALTH, MENTAL AND PHYSICAL CULTURE.



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A. N. BELL, A.M., M.D., Editor.

T. P. CORBALLY, A.M., M.D., } Associate Editors.
HARRY KENT BELL, M.D., }

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THE SANITARIAN.

JULY, 1900.

NUMBER 368.

"THE SANITARY PIG."

Editor of THE SANITARIAN:

Have you room for more comment on "Sanitary Pig?" The question is inspired by the article so signed in your May number. That "hog and hominy" is one of the best anti-tubercular foods I have no doubt. I am prompted to give some experiences of my own in pork raising, after looking over the article signed "Sanitary Pig."

In furnishing pork products from pigs of my own raising for the class of anti-pork people in Boston, New York, etc., it was necessary to have both healthy and cleanly pigs. I learned the habit of the pig by this experience. I learned, too, I think, much about the causes of cholera in pigs.

Two years prior to my first slaughtering and putting up the "Strawberry Hill Pork Products," cholera visited my fields. I had divided the pasturage in September. Thirty pigs, one-half the herd, the largest and best, were put in small quarters on open grounds, with storm coverings, for fattening. Corn, cornmeal, wheat, oats and barley, some potatoes and water was their food. They ate, grew and fattened. They had green corn by them at all times on the ear, so they were never hungry.

One day two or three of these pigs failed to come when food was poured to the trough; within a week all failed to come. At the end of two weeks there was but one pig left to come, and this pig had not strength enough to leave his couch; all the other pigs had died of cholera.

Over the fence the thirty pigs left behind to grow, not to fatten, had the run of a chestnut grove. They had some light feed besides. They breathed the cholera atmosphere, but had no cholera. They slept within ten rods of the cholera hospital. They grew, and none were ever afflicted with any disease.

This was my first experience in pig growing. It was the first I had ever seen of cholera. It was not profitable. I thought it over. I was convinced that food in excess was the cause. They had nothing to do but eat and lie down. Food was supplied. On the other side, the pigs must hunt and root for food.

I determined to try pig raising on another basis. I decided that a pig, properly cared for, might be healthy like a child properly cared for. The next spring I put the first sow to farrow into this same cholera hospital; not because it was necessary, but to test a sound animal in an atmosphere of cholera germs. The ground was high and dry. There had been no burning or burying of litter. Nine pigs came. It was open yard with a lean-to roof for storms. They were fed with milk, some grain, and had fresh water all the time. No disease came to this yard. The neighbors came, however, to see more cholera pigs. They knew of the previous year's experience and of the danger of putting healthy animals upon grounds full of cholera germs. They were disappointed. I will not say they were grieved (all of them), but there was no repetition of cholera here.

This was the end of all cholera experience on Strawberry Hill. I was several years growing pigs. From one hundred to five hundred were upon ten acres of ground, changing from time to time and place to place each year. Water from the city pipes was constantly supplied each field. A bathing tub was furnished in all apartments. It was sometimes full of pigs in hot weather. I have often seen them lie in the tub, reaching up their open mouths to allow the small stream of pure water to run down their throats. Waste water did not accumulate here. Loose stone beneath took away the excess. Twenty pigs were in each yard of a half acre. There was a lean-to cover for storm, with earth filling it so high that water never entered. Sand and leaves, or corn stalks, for bedding, summer and winter; cracks on side, with open southern exposure, made good ventilation.

The pig does not use his immediate sleeping quarters for toilet purposes. He goes out, when space allows. I know of no animal which we use for foods more cleanly in this respect than the pig. The cow, the sheep and the domestic fowls leave their excrements in their beds. The pigs do not.

Rye, clover and other grains and grasses were scattered in these apartments. Buttermilk was brought many miles for the Strawberry Hill pigs. They were fed twice per day and no food al-

lowed to stand over. The feeder soon learned how much they would consume. He preferred to keep within the limits rather than go about and collect the excess. It was a rule of the grounds to remove whatever was not at once consumed. Under this rule the pig always had an appetite.

So much for the mode of feeding and caring for pigs. During the several years of my continuance in the "Strawberry Hill pork business" there were isolated cholera cases all about us. Every pig and every pig's mother here was a normal animal, as nearly as domesticated animals can be, I think. I have often said that the children of this city were neither so well fed, clothed, bathed or housed as Strawberry Hill pigs. The repeated sickness of each summer and autumn, plus the death record among children, was my authority for so saying.

I am convinced that the normal pig, in his native condition in the forest, dies of old age or violence only. So far as I know, there is no evidence of his ever being sick until he becomes the servant and scavenger of civilization. With the exception of children born, bred and trained under the modern appointments, I know of no animal so much abused as the pig.

Here, if you will allow me, I will allude to an error made by Dr. J. H. Kellogg in his broadside shell and shot arraignment of the pig. He is made to say there is a scrofulous sewer issuing from the inner side of each fore leg, and that scrofulous matter in the pig becomes dammed up—sets back, in other words—when the pig wades in his filthy enclosure, and the consumer of this pig's flesh becomes a reservoir of scrofula thereby.

If the doctor were correct in his statement of the fore leg anatomy and physiology of the pig, his sledge-hammer blows should certainly fall upon the keeper of the pig, and not the pig. It is the keeper that supplies this lakelet of glue in which the pig lives and moves and has his being.

But I think the doctor is entirely in error, if "Sanitary Pig" quotes him correctly. The pig, like other animals, has the intestinal and renal exits for excrementitious matter. I do not understand he has a third canal, alimentary or renal, running down his fore legs, where exits are so liable to be occluded.

I am here reminded of the Adam and Eve history: "The woman whom thou gavest me, she gave me of the tree and I did eat." Mankind says, or the doctor says in his defense, after he has sampled the fruit of every tree, and the alcohol of every fruit, and

the condiment of every clime, and the compounds of all the condiments, and the microbes of every sleeping room and convention hall; after sampling these, and finding himself about to be sampled by the devouring tubercular microbes, his family physician says: "The pig thou gavest to me had a scrofulous sewage canal in his fore leg, and he gave me of the fore leg and I did eat."

I regret exceedingly that one with the regular labels and trusted in positions of great responsibility and authority, civic and governmental, should thus attempt to shield humanity in his multitude of errors, and cast upon the innocent and inoffensive pig, the most cleanly of all our food producing animals, the stigma of creating the germs of scrofula and tuberculosis.

"Sanitary Pig" has the right of it. His accusers everywhere have big beams in both eyes. Let on the X-ray, and the forest pig will come out without a blemish. So will the domestic pig when space, water, suitable food and sleeping quarters are furnished.

Yes, the pig is falsely accused, and the food products of the pig likewise. When the keeper of this animal furnishes a clover field with fresh running water for growing, and a suitable corn ration for fattening, the two being combined from beginning to end with spacious, well-ventilated night quarters, health and cleanliness will prevail. So when the consumer of pork furnishes a clean, healthy, hungry stomach, rather than one sour, unclean, overdistended, at the dinner hour, his spare rib will "agree" with him. If he stops eating while yet hungry, he will want some of the same rib when cold at the next meal, and it will agree with him. From a sanitary standpoint, too much *bad* pork is damaging. But I believe *too little good pork* is more damaging.

J. B. LEARNED, M. D.

Florence, Mass., May 16, 1900.

SLANDER.

"We must not stint
Our necessary actions, in the fear
To 'scape malicious Censures; which ever,
As ravenous Fishes, do a vessel follow,
That is new trimm'd; but benefit no farther
Than vainly longing." —*Shakespeare.*

SANITARIUMS AND CLIMATIC CONDITIONS FOR THE TUBERCULOUS.*

By W. S. WATSON, M. D., Superintendent of Riverview Sanitarium, Fishkill-on-the-Hudson, N. Y.

I am very much interested in the paper which has been read by Dr. Bleyer.† I feel that he must be congratulated on the efforts he has made in this direction. I have been watching him with considerable interest for some years, and I feel and believe that he is doing a good work.

I have done a little along the same line myself, but not in the way he has shown us to-night. I have been using colored light by the aid of the sun's rays, using blue, orange and red, etc. I am confident there is a great deal in it, not only in the treatment of tuberculosis, but I believe it is going to do wonders, and that we are just on the eve of some wonderful discoveries in that direction.

With reference to the construction of sanitariums for the management of the tuberculous class of patients, in my mind, this is a matter that ought to be taken into consideration. The building of such structures without any regard to getting the effect of light (the sunlight), and the different colored light effects is a serious mistake; the construction of sanitariums without carefully considering these points in the treatment of consumption is radically wrong. I do not think we are sufficiently impressed with the advantages to be derived from sunlight, nor in having such structures situated or located where one can get the sunlight, and, when that cannot be obtained, the advantage of arc light, at least.

Dr. Bleyer told us in his admirable paper of the pressing necessity for homes or sanitariums for the care and treatment of the consumptive, and of the advantages of certain colored lights; he also touched upon plans of their construction, to all of which we heartily agree. As to the effect of the violet or other rays upon the tuberculosis bacilli, we are as yet unable to say anything definite. If we were positively certain that Dr. Bleyer or any one

*Read before the Medico-Legal Society in joint session with the American Congress of Tuberculosis, February 21, 1900. Discussion of first question.—From advance sheets "Medico-Legal Journal." †SANITARIAN for June.

else had found a positive means of destroying the bacilli, we would say, well done; let us have a united effort to get our consumptive class in sanitariums near us where such means can best be used. While there remains a doubt as to the practicability and curative action of colored sun or electric rays, we believe it wise and proper to turn our attention to the best possible climatic conditions for the consumptive, since a climate favorable to long life is the one thing sought by man. The question is, Where can I go to prolong my chances of life, suffer least and get the most enjoyment out of the time allotted me? Thousands are asking themselves those questions, the consumptive more than any other, since consumption is the greatest scourge of the human race—among civilized people nearly one-tenth of the population, and, so far as we know, there is no country entirely free from its ravages. In Iceland the disease is rare, while in the West Indies it is of common occurrence. This shows that heat is not a preventative, and that cold does not necessarily produce it. That medicines are of but little if any use can scarcely be doubted. Cod liver oil and immunized serum are of doubted value. Climate is the one thing most promising at present.

I will say that I am not favorable to a cold climate for a sick man; especially is a low temperature detrimental to the consumptive, notwithstanding there are strong advocates of the north, as the Adirondacks. I believe this positively wrong; we will admit that many cases are braced up for a time in a vigorous, cold climate; the electro-positive conditions tend to make the depressed and jaded person feel better, but it is absurd, to my mind, to send a person suffering from consumption into a cold climate, as he is of necessity a person with impoverished blood and enfeebled circulation. To place him where he must be shut up indoors, week in and week out, and expect any lasting results for good, is beyond our comprehension. We will concede many try and are much of the time out in the cold air of the northern resorts, the physician often insisting that it is positively necessary to remain out. We agree that outdoor air is necessary, but more die in the attempt than get any lasting benefit from such ventures, and the sooner the general public understand the unreasonableness of such doctrines, the better for the unfortunates. While we do not ap-

of cold, high altitudes and extreme changes, we also do

a fitness in warm, humid climates for the consumptives.

e sent many cases of consumption to Georgia and South

Carolina in years gone by, also to Florida. In a few instances they have been benefited, but more frequently returned under advice of the undertaker; if not under the undertaker's immediate advice he claimed them a little later.

Akin, Summerville and Thomasville are all admirable climates in comparison with Central or Northern New York to live in and for the most part the comfort of the consumptive during winter months, but the variations of climate are even there too marked, changes are too abrupt to be what is desired; the pine forests are no doubt beneficial and soothing by reason of the ozone and the sweet, resinous odors of pine—especially is this true of bronchial troubles. The middle Southern States are better fitted to the nervous class than the consumptive.

The chief points of importance of climatic conditions, are, first, what are the probable conditions that are most favorable to non-development, retardation or cure of the consumptive.

The first is dryness of air, freedom from micro-organisms, irritants and noxious gases, the largest amount of sunlight practicable, diminished barometric pressure, ozoniferous atmosphere. Chief of all, a climate that admits of an outdoor life the largest possible amount of time, believing that outdoor life is positively essential and that an indoor life is positively destructive, and hastens to an untimely end. We are sure that high altitudes in a Southern latitude are the only safe resort and afford the advantages enumerated. Our understanding and observations are such that we believe that portions of the Republic of Mexico, the high table-lands at an elevation of from 3,000 to 5,000 feet above the sea level, offer more and better advantages than any other country, perhaps, in the world.

When all is considered, Mexico has climatic conditions suited to almost any possible condition that can exist; temperature and barometric pressure depending entirely upon elevation, as do also humidity and dryness there. In the high altitudes there is a positive freedom from sudden changes of extreme character by reason of the lofty and continuous mountain ranges that surround the plateau lands of the Republic, which is not a feature of any other country in the world, to our knowledge.

Various countries have the desired land elevation, but do not have the mountain protection, consequently do not have the evenness of temperature required for an outdoor life of the invalid or a consumptive. In most of the mountain resorts of the world there

are one or more serious objections to our recommending them as a constant home or even a temporary resort.

In northern climes, the extremely low temperature is inconsistent with outdoor life, a large share of the time, which of itself is a serious objection. The day is near at hand when no medical men can conscientiously advise cold climate for an invalid, much less the consumptive. Another objection to high altitudes in northern climates is the sudden fall of temperature, a thing that must not be encountered by an enfeebled constitution, if it would do well. We wish to repeat that a low, humid, hot country is equally detrimental or nearly so, to that of a cold, frigid one, for the consumptive. Portions of Mexico and New Mexico are certainly well adapted to certain classes of nervous cases and pulmonary conditions. Why? By reason of the high altitude that may be obtained, the air being aseptic, free from dust, irritation and low forms of organism or microbes, and by reason of rapid evaporation of morbid secretions in the lungs which is promoted by the reduced barometric pressure and the dryness of the air at the elevations named, and by the increased oxidation of the blood and tissue changes which are due to increased metabolism, largely dependent on the sunlight of these high altitudes.

In high altitudes there is an increased frequency and freedom of the blood circulating through the lungs, hence increased metabolism and consequent tissue changes.

The increased activity and deep breathing attendant upon a life in high altitudes tend to improve nutrition.

Along with the local and general nutritional effects that are manifest from a stay in the high altitudes of Mexico, are the delightful stimulating effects upon the nervous system.

Still another noticeable feature, one much to be desired, is the increase of red blood corpuscles and hemoglobin. Such blood changes are unquestionably due to the increased amounts of oxygen inspired in these high altitudes. Anemic conditions rapidly disappear in the sunlight of Mexico's high altitudes; rapid and remarkable improvement in the local and general conditions is coincident with the blood changes, in the consumptives that are transported from the sea level to altitudes of three or more thousand feet; this has been demonstrated by numerous careful observations in Europe, North and South America.

So far we believe the only successful means of combating tuberculosis, is by increasing the resisting powers of the system. Outdoor life in a mild, dry climate, where the general health can

be kept to the highest possible standard, offers certainly the best possible advantage and the longest immunity.

The climate of the high lands of Mexico certainly offers all that can be desired in point of climate.

I wish in calling attention to Mexico as a natural sanitarium, or portions of it, to add that the Republic of Mexico is a much misunderstood country; although near us, it has seemed to be a far off land, without merit, beauty, or other attraction; its inhabitants a people who are strangers to hospitality, who live within and for themselves, whose prejudices are so deeply rooted by reason of never to be forgotten unpleasantness, that cost them many lives and much territory, notwithstanding the United States, after giving them the desperate whipping they did, and afterward offering an apology for the act by paying them for the lands they had lost, has not wholly healed over the wound, and even now each and every Mexican feels called upon to see how unpleasant he can make it for a would-be settler from the United States.

Such, we are happy to say, is not the case, but is a misconception. A more liberal, hospitable people are not to be found. Instead of repelling, they invite you to come; they ask that Mexico be better known; they seek investigation of their great country, the advantages of climates, etc.

A STUDY AS TO THE CAUSE OF TUBERCULOSIS AN IMPORTANT FACTOR AS TO ITS TREATMENT.*

By B. F. Lyle, M. D., Cincinnati, Ohio.

As physical depreciation is an important, if not an essential, factor in the propagation of consumption, the avoidance of habits and methods of living which favor this condition, is a self-evident necessity if we wish to avoid the disease or promote its cure.

While faulty environments have a debilitating influence on persons, we also learn, from the investigations of Prof. Ransome and others, that these same conditions favor the continuation of the existence of tubercle bacilli outside the body, and may even favor their growth.

*Read before the Medico-Legal Society as a contribution to American Congress of Tuberculosis, March 21, 1900.—From advance sheets of "The Medico-Legal Journal."

From the bacteriological experiments of Dr. Denison we learn the capability of altitude in inhibiting the growth of bacteria, and its advantages because of this and other reasons. Still the search for a locality or climate where consumption cannot be acquired, has always been in vain. The large percentage of persons infected with the disease makes it a pecuniary impossibility to hope to secure for them the benefits of a removal to more suitable climates.

The disease is with us to stay until we can, by aid of an intelligent and enlightened public opinion, accomplish its eradication. For consumption, like all other infectious diseases, is a filth disease, and consequently a preventable one.

The universal prevalence of tuberculosis indicates that all are exposed to the influence of its exciting cause. That, as a rule, only those of natural or acquired physical inferiority succumb, proves the necessity of having perfect and healthy bodies.

As causes predisposing to the disease, we will consider heredity, age, sex, race, occupation, food and environment, not taking up the potent influences of syphilis, intemperance, trauma, and the debilitating and inviting influences of bronchitis, pneumonia, influenza, and other diseases.

HEREDITY.—Since the publication of Squire's paper, the importance of heredity has not been given the consideration it no doubt deserves. As Baumgarten suggests, the presence of tuberculosis may be, and no doubt is at times, due to direct transmission from the mother.

The following case, which has not yet been published, is an illustration: Betty P., colored, female, single, aged 32 years, was admitted to the Cincinnati Branch Hospital for Consumptives, December 15, 1899. She stated she had been sick for two years and had had attacks of hemoptysis during the whole of that period. She had had frequent night sweats for the past twelve months. A child eighteen months old had died four months previous to her admission. She was in the last month of pregnancy. On December 15th her child was born, and on the 17th she died. Post mortem examination revealed a large number of cavities in the upper and middle lobes of the right lung and consolidation of the remaining lung areas.

The child weighed three and one-half pounds at birth; when it
' the age of two months it weighed five pounds; its weight
ned to four and one-half pounds; it died March 3, 1900,
ays.
st mortem showed the lungs, liver and spleen filled with

myriads of caseous tubercular deposits. The kidneys also contained a few caseous masses in the cortical substance; the bronchial glands were very large; the intestines and mesenteric glands uninvolved. Tuberculosis has been produced experimentally in the young of mice by injecting tubercle bacilli in the pregnant mother.

We have good reason to suppose if the number of bacilli transmitted is small the child may be able to cope with them successfully until an attack of measles, whooping-cough or other exhausting disease turns the scale in the wrong direction.

From the consideration of heredity we learn the importance of not only isolating the patients from all possible sources of infection, but the necessity of attempting, by hygienic measures and medicinal agents, to increase the physical well-being of the patient.

The case cited also proves the necessity of adopting some legal steps to prevent the marriage of tuberculous persons, as my patient was able to successfully carry and give birth to two living children while a victim of the disease.

AGE.—Sanitary laws, and increased knowledge of sanitation and hygiene, have produced great results in diminishing the deaths from consumption during the past forty years, the difference between the first and last decade being 36 per cent. (These are English statistics.) This affected chiefly the most productive age periods. Between 15 and 30 years, or early adult life, the diminution is 52 per cent. This marked improvement is due largely to the removal of the sources of the so-called "aerial sewerage."

Like changes have not occurred in the mortality rates of intestinal tuberculosis. Here the reduction has only been 8.5 per cent. for all ages, 3 per cent. between the years 1 and 10, while under 1 year of age there has been an increase of 21.7 per cent.!

These statistics indicate the happy results of having improved work shops and homes, and the unfortunate consequences of lack of proper measures to prevent the giving to the young the milk of cows which are tuberculous. About 40 or 50 per cent. of the milk cattle in the populous parts of the country are in this condition.

SEX.—It is impossible from hospital statistics to judge the relative frequency with which the sexes are affected, as women are less apt to apply to hospitals for treatment when sick. Judging from the fact that the larger number of females affected are between 20 and 30 years of age, and the larger number of males are found in the following decade, we may infer that females are able to offer less resistance to the attacks of the disease.

Race seems to exercise some slight influence in this respect, as we find the majority of cases in colored people occur at an earlier age than they do in the corresponding sexes of the whites. This would indicate an increased susceptibility.

OCCUPATION.—The record of 300 males admitted to the Branch Hospital, after excluding laborers and teamsters, shows the following as occupations which seem to have a deleterious effect and the number who followed them: stone-cutters and masons, 12; barbers, 10; porters, 9; cooks, 8; bartenders, 8; clerks, 8; shoemakers, 7; waiters, 6; painters, 5; molders, 4; machinists, 3; tailors, 3; broom-makers, 2. Owing to the comparatively few men in our city who are cooks, the number admitted is very large. This is no doubt due to the fact that they work in dark, illy-ventilated rooms, which are filled with moisture and are superheated.

The deleterious influence of the stone-cutters' trade has long been recognized.

Two of the four Hebrews admitted were tailors, the occupation of cleaning and repairing clothing offering many opportunities for infection.

ENVIRONMENT.—The deleterious influence of lack of sunshine, damp houses and poor ventilation is self-evident. Its importance, however, is not fully appreciated nor the responsibility of house owners recognized. When a patient is admitted to our hospital we have been in the habit of indicating the place of former residence by placing a dot on a map of the city. It is almost startling to notice how the older portions of the city and the houses along the river, canal and hillsides are indicated. From one house we have received four patients, all from separate families; from two other houses we have received two each.

A newspaper reporter, having seen the map and, being animated with a philanthropic desire to warn his fellow citizens, secured a copy. After having it photographed and a plate made, he prepared an article extolling the advantages of proper sanitation. With commendable pride he showed it to his chief, who ordered the plate melted and the article destroyed, giving as his reason his inability to protect himself from the clubs and invectives of the infuriated property holders. Truly this is not Altruia!

FOOD.—The importance of a proper dietary for the prevention as well as the cure of the disease is self-evident.

A lady of our city recently went into one of the small groceries which supplies people of one of the districts just mentioned with

Her object was to learn the variety and kinds of food pur-

chased. She was informed that bread and molasses, seconded by potatoes and cabbage, were chiefly sold; these were supplemented by beer obtained from a neighboring saloon. Lack of proper nutrition, caused by the adoption of such a regimen, is no doubt a potent agent in promoting the increase of the disease under consideration, as well as intemperance.

In this city, as in many others, societies are found, the purposes of which are to instruct the ignorant what food to buy and how to cook it. Instruction is also given in an unobtrusive way of the advantages of cleanliness and cheerful homes. If we hope to diminish the spread of tuberculosis it will be necessary to multiply these methods.

Of the 300 men received into the hospital, five have each lost a leg; beside these, many other patients have been inmates of either the surgical or medical wards of hospitals. The cause of the disease in their cases is obvious, and can only be removed by excluding from all general hospitals patients who have tuberculosis.

This is the course pursued by the Cincinnati Hospital, and its advantages redound not only to the benefit of those who are removed to a more suitable location, but also to those who are protected from an infectious disease during periods of prostration, accompanied by diminished resisting power.

EXTERMINATION OF THE HUMAN RACE BY TUBERCULOSIS; ITS CAUSES, ITS EFFECTS, ITS PREVENTION, AND CURE.*

By FRANCISQUE CROTTE, A. M., Ph.D., of Paris. Translated from the French by DR. F. T. LABADIE.

It is scarcely fifty years since tuberculosis is really known—that is to say, that it has taken a development and is spreading with alarming proportions. To look at the statistics in Europe is enough to give us a shudder when we see that in England, especially in London, about 75 per cent. of the population are suffering from this terrible scourge; in Russia, 40 per cent.; in Germany, about 35 to 40 per cent.; in France, 30 to 40 per cent.; in Italy and Spain, 35 to 40 per cent., and in America, 50 per cent.

*Read before the Medico-Legal Society in joint session with the American Congress of Tuberculosis, February 22, 1900. Discussion of first and second questions.—From advance sheets of "The Medico-Legal Journal."

the condiment of every clime, and the compounds of all the condiments, and the microbes of every sleeping room and convention hall; after sampling these, and finding himself about to be sampled by the devouring tubercular microbes, his family physician says: "The pig thou gavest to me had a scrofulous sewage canal in his fore leg, and he gave me of the fore leg and I did eat."

I regret exceedingly that one with the regular labels and trusted in positions of great responsibility and authority, civic and governmental, should thus attempt to shield humanity in his multitude of errors, and cast upon the innocent and inoffensive pig, the most cleanly of all our food producing animals, the stigma of creating the germs of scrofula and tuberculosis.

"Sanitary Pig" has the right of it. His accusers everywhere have big beams in both eyes. Let on the X-ray, and the forest pig will come out without a blemish. So will the domestic pig when space, water, suitable food and sleeping quarters are furnished.

Yes, the pig is falsely accused, and the food products of the pig likewise. When the keeper of this animal furnishes a clover field with fresh running water for growing, and a suitable corn ration for fattening, the two being combined from beginning to end with spacious, well-ventilated night quarters, health and cleanliness will prevail. So when the consumer of pork furnishes a clean, healthy, hungry stomach, rather than one sour, unclean, overdistended, at the dinner hour, his spare rib will "agree" with him. If he stops eating while yet hungry, he will want some of the same rib when cold at the next meal, and it will agree with him. From a sanitary standpoint, too much *bad* pork is damaging. But I believe *too little good pork* is more damaging.

J. B. LEARNED, M. D.

Florence, Mass., May 16, 1900.

SLANDER.

"We must not stint
Our necessary actions, in the fear
To 'scape malicious Censures; which ever,
As ravenous Fishes, do a vessel follow,
That is new trimm'd; but benefit no farther
Than vainly longing." —*Shakespeare.*

SANITARIUMS AND CLIMATIC CONDITIONS FOR THE TUBERCULOUS.*

By W. S. WATSON, M. D., Superintendent of Riverview Sanitarium, Fishkill-on-the-Hudson, N. Y.

I am very much interested in the paper which has been read by Dr. Bleyer.† I feel that he must be congratulated on the efforts he has made in this direction. I have been watching him with considerable interest for some years, and I feel and believe that he is doing a good work.

I have done a little along the same line myself, but not in the way he has shown us to-night. I have been using colored light by the aid of the sun's rays, using blue, orange and red, etc. I am confident there is a great deal in it, not only in the treatment of tuberculosis, but I believe it is going to do wonders, and that we are just on the eve of some wonderful discoveries in that direction.

With reference to the construction of sanitariums for the management of the tuberculous class of patients, in my mind, this is a matter that ought to be taken into consideration. The building of such structures without any regard to getting the effect of light (the sunlight), and the different colored light effects is a serious mistake; the construction of sanitariums without carefully considering these points in the treatment of consumption is radically wrong. I do not think we are sufficiently impressed with the advantages to be derived from sunlight, nor in having such structures situated or located where one can get the sunlight, and, when that cannot be obtained, the advantage of arc light, at least.

Dr. Bleyer told us in his admirable paper of the pressing necessity for homes or sanitariums for the care and treatment of the consumptive, and of the advantages of certain colored lights; he also touched upon plans of their construction, to all of which we heartily agree. As to the effect of the violet or other rays upon the tuberculosis bacilli, we are as yet unable to say anything definite. If we were positively certain that Dr. Bleyer or any one

*Read before the Medico-Legal Society in joint session with the American Congress of Tuberculosis, February 21, 1900. Discussion of first question.—From advance sheets "Medico-Legal Journal." †SANITARIAN for June.

else had found a positive means of destroying the bacilli, we would say, well done; let us have a united effort to get our consumptive class in sanitariums near us where such means can best be used. While there remains a doubt as to the practicability and curative action of colored sun or electric rays, we believe it wise and proper to turn our attention to the best possible climatic conditions for the consumptive, since a climate favorable to long life is the one thing sought by man. The question is, Where can I go to prolong my chances of life, suffer least and get the most enjoyment out of the time allotted me? Thousands are asking themselves those questions, the consumptive more than any other, since consumption is the greatest scourge of the human race—among civilized people nearly one-tenth of the population, and, so far as we know, there is no country entirely free from its ravages. In Iceland the disease is rare, while in the West Indies it is of common occurrence. This shows that heat is not a preventative, and that cold does not necessarily produce it. That medicines are of but little if any use can scarcely be doubted. Cod liver oil and immunized serum are of doubted value. Climate is the one thing most promising at present.

I will say that I am not favorable to a cold climate for a sick man; especially is a low temperature detrimental to the consumptive, notwithstanding there are strong advocates of the north, as the Adirondacks. I believe this positively wrong; we will admit that many cases are braced up for a time in a vigorous, cold climate; the electro-positive conditions tend to make the depressed and jaded person feel better, but it is absurd, to my mind, to send a person suffering from consumption into a cold climate, as he is of necessity a person with impoverished blood and enfeebled circulation. To place him where he must be shut up indoors, week in and week out, and expect any lasting results for good, is beyond our comprehension. We will concede many try and are much of the time out in the cold air of the northern resorts, the physician often insisting that it is positively necessary to remain out. We agree that outdoor air is necessary, but more die in the attempt than get any lasting benefit from such ventures, and the sooner the general public understand the unreasonableness of such doctrines, the better for the unfortunates. While we do not approve of cold, high altitudes and extreme changes, we also do not see a fitness in warm, humid climates for the consumptives. We have sent many cases of consumption to Georgia and South

Carolina in years gone by, also to Florida. In a few instances they have been benefited, but more frequently returned under advice of the undertaker; if not under the undertaker's immediate advice he claimed them a little later.

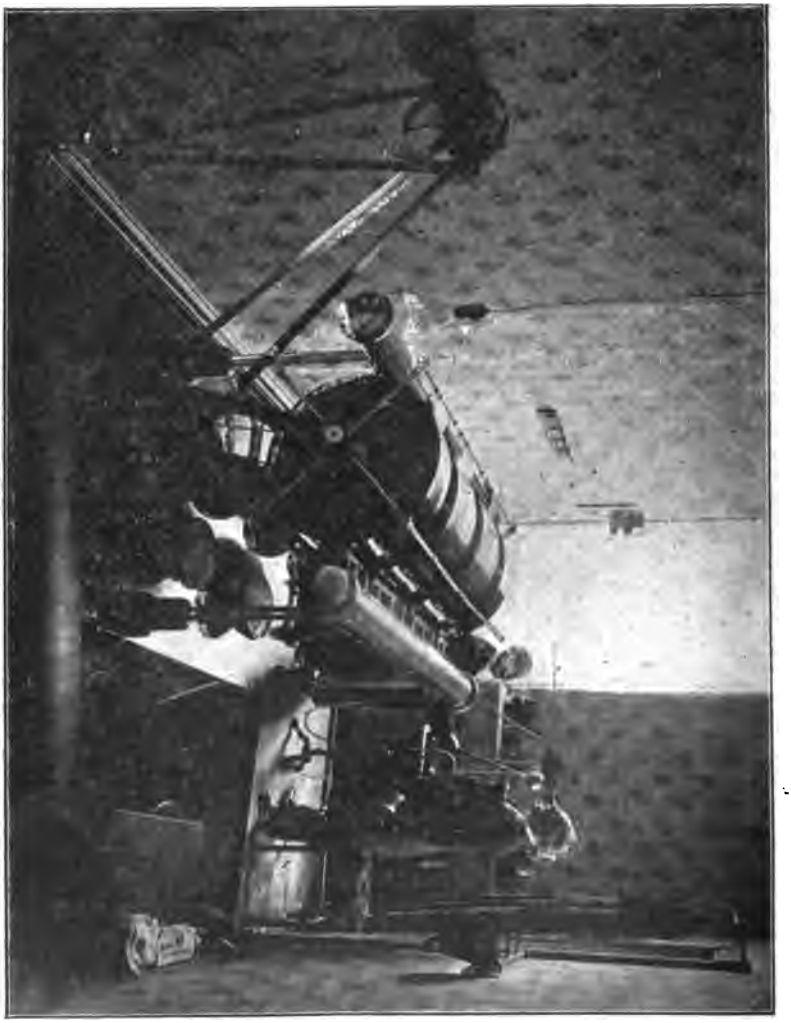
Akin, Summerville and Thomasville are all admirable climates in comparison with Central or Northern New York to live in and for the most part the comfort of the consumptive during winter months, but the variations of climate are even there too marked, changes are too abrupt to be what is desired; the pine forests are no doubt beneficial and soothing by reason of the ozone and the sweet, resinous odors of pine—especially is this true of bronchial troubles. The middle Southern States are better fitted to the nervous class than the consumptive.

The chief points of importance of climatic conditions, are, first, what are the probable conditions that are most favorable to non-development, retardation or cure of the consumptive.

The first is dryness of air, freedom from micro-organisms, irritants and noxious gases, the largest amount of sunlight practicable, diminished barometric pressure, ozoniferous atmosphere. Chief of all, a climate that admits of an outdoor life the largest possible amount of time, believing that outdoor life is positively essential and that an indoor life is positively destructive, and hastens to an untimely end. We are sure that high altitudes in a Southern latitude are the only safe resort and afford the advantages enumerated. Our understanding and observations are such that we believe that portions of the Republic of Mexico, the high table-lands at an elevation of from 3,000 to 5,000 feet above the sea level, offer more and better advantages than any other country, perhaps, in the world.

When all is considered, Mexico has climatic conditions suited to almost any possible condition that can exist; temperature and barometric pressure depending entirely upon elevation, as do also humidity and dryness there. In the high altitudes there is a positive freedom from sudden changes of extreme character by reason of the lofty and continuous mountain ranges that surround the plateau lands of the Republic, which is not a feature of any other country in the world, to our knowledge.

Various countries have the desired land elevation, but do not have the mountain protection, consequently do not have the evenness of temperature required for an outdoor life of the invalid or a consumptive. In most of the mountain resorts of the world there



The first operation consists in the disinfection of the patient by ablutions with a solution of formol. After this, and when the pores of the skin are open, we let the static currents pass by connecting both poles on the lungs—that is, one pole on the chest and the other on the back.

Fig. 1 represents the static machine made in Paris specially for the transport of medicaments. In Figs. 2 and 3, sponges saturated with other antiseptics, dosed according to the case, are ap-

plied on the skin for about ten minutes, and we permit the currents to pass for the transport. In this manner the bacillus is absolutely destroyed, and if its reproduction were not so rapid, a few treatments would be sufficient for the cure; but it is necessary to apply the treatment every day in order to prevent the new-comers from creating their toxines, the initial cause of hectic fever, of the poisoning of the blood, and of the decomposition of the pulmonary substances.

There is no possible room for doubt. The transfusion of medicaments through the pores of the skin by electricity is an accomplished fact. (Fig. 3, inadvertently omitted).

Analysis made by Dr. Wolf, bacteriologist of Women's Hospital, New York City, who has ascertained the presence of formaldehyde and of iodine in the lungs and other organs after the trans-

fusion of these medicaments into the bodies of animals by static currents of electricity:

NEW YORK, September 9th, 1899.

MR. FRANCISQUE CROTTE.

Dear Doctor.—I removed the lungs of the guinea-pig you treated with the iodine, extracted same with distilled water and chlorine water, the same acidified and shaken with carbon disulphide; I obtained a marked violet-red coloration, showing the presence of iodine. (Signed.) A. WOLF.

No. 4272.

NEW YORK, September 9th, 1899.

MR. FRANCISQUE CROTTE.

Dear Doctor.—I removed the lungs of the guinea-pig you submitted to the formaline treatment; extracted same with distilled water, distilled the extract, treated the distillate with a drop of very dilute phenol, and poured same over strong sulphuric acid. At the point of contact of the two fluids, I observed a faint but positive pinkish coloration, showing the presence of formaldehyde. The organs of this animal showed a marked form of preservation, not the slightest evidence of putrefaction being evident.

No. 4273. (Signed.) A. S. WOLF.

The above reference to the preserved condition of the specimens, after lying four days in the bottles, without alcohol or other preservative, is another proof of the presence of *formaldehyde,* which prevents putrefaction.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

SEVENTEENTH ANNUAL MEETING, HELD IN THE ARLINGTON HOTEL, WASHINGTON, D. C., MAY 1-3, 1900.

ABSTRACT OF PROCEEDINGS.

FIRST DAY.

ABRAHAM JACOBI, M. D., President, in the chair.

PRESIDENT'S ADDRESS.—Dr. Jacobi, in his opening address, discussed the subject of CARDIAC MURMURS IN INFANCY AND CHILD-

HOOD. He referred to the rarity of functional murmurs in infants, and reported such a case occurring in a colored child aged thirteen months. In this case the murmur, which was a loud systolic mitral one, could not be accounted for at autopsy. Dr. Jacobi said that extra-cardial murmurs, mostly systolic in children, were very infrequent in infants below two years, because at that early time the heart was larger in proportion, and less covered by the lungs. Ulcerous endocarditis might not exhibit any murmur, and the diagnosis of this condition was thereby rendered difficult. Proliferating endocarditis might give rise to a systolic mitral murmur in the newly born, which might either last a lifetime, or disappear in time with the growth of the organ, or by absorption, or by progressing compensation. Most murmurs meant organic lesions either in the valves or in the myocardium; in that respect all ages were alike. Among other causes of cardiac murmurs in infancy, aside from the infectious diseases and rheumatism, Dr. Jacobi mentioned contraction or partial obliteration of the mitral orifice, or adhesion of the valve; also persistence of the ductus arteriosus Botalli, and congenital stenosis of the pulmonary artery, or other congenital defects.

The following papers were read by title:

"The Modern Physician's Duty to His Tuberculous Patients," DR. FREDERICK I. KNIGHT, of Boston.

"The Construction and Management of Small Cottage Sanatoria for Consumptives," DR. ARNOLD C. KLEBS, Chicago.

DR. R. C. NEWTON, of Montclair, N. J., gave a

REPORT OF CERTAIN CASES OF TUBERCULOSIS WHICH WERE APPARENTLY DUE TO THE NATURE OF THE SOIL.

He gave a history of four families whose family history showed no tuberculous taint, but who had several cases of it in the family after living in damp houses, or houses with damp cellars. The tubercle bacillus may be found in healthy organisms, which can resist it. Let the subject's vitality be lowered and his resistance decreased, and he is much more susceptible to infection; damp places tend to do this, hence the danger. It is far easier to remove the conditions causing the disease than to cure it when it has a start. The problem is that of improving surroundings and sanitation. Good drainage has been shown by statistics to decrease tuberculosis; no climate, however good, is proof against filthy soil.

Houses should have dry cellars and sandy subsoil, and be away from swamps.

DR. LEONARD WEBER: In New York we find it is not so much the soil as the crowded condition of the people and their unsanitary ways of living that cause the spread of the disease by rendering the soil of the body good for the attack of the bacilli. Dampness does not increase danger of infection, but decreases powers of resistance. The paper showed the necessity of getting rid of the overcrowded tenements.

DR. N. S. DAVIS said that acquired tuberculosis is most favored by poorly ventilated rooms and imperfect exercise, and badly ventilated lungs, which need ventilation as well as rooms.

DR. C. L. TURNER spoke of the great neglect of proper hygiene and prophylactic measures among all classes in this country, and urged that it was the duty of the physician to look after his patients in these respects while they were well, as much as to attend them when actually sick.

DR. E. R. BALDWIN: Moisture keeps the tubercle bacillus alive, and drying kills it; this may also enter into the cause of tuberculosis among those living in damp houses.

DR. JUDSON DALAND spoke of the recent appearance and rapid spread of consumption in Iceland, attributing this to the dampness, fog and winds.

DR. NEWTON ended the discussion by illustrating from his own experience how moisture could collect under the floor of a tent close to the ground, even in a very dry locality.

DR. CHARLES DENISON, of Denver, read a paper entitled

EDUCATIONAL AND LEGISLATIVE CONTROL OF TUBERCULOSIS.

He discussed at some length the degenerative effects of deficient ventilation and defective heredity, and showed how this condition, by inducing deficient pulmonary air and blood circulation, leads to auto-infection. He took a sample room, such as most persons occupy, and pointed out the usual defects in ventilation, then passed on to a discussion of what he termed the "life of the air," which he said exists chiefly in its motion, which, with its light, heat and electrical power, comes from the sun, and the force of which is annulled by the imprisonment of the air through defective ventilation. Thus a gradual loss of vitality is brought about. This is the unified predisposing cause, anterior to the bacillus of

tubercle, which will explain alike the origination of tuberculosis in animals, fowls and men. Dr. Denison closed by urging legislation requiring proper ventilation, courses for the study of methods of ventilation, in all advanced schools and colleges, and governmental investigations as to the best ways and proper and necessary limits to ventilation.

DR. B. ROBINSON spoke of women's long skirts being an important factor in the spread of the tubercle germs.

DR. C. E. EDSON said that the bacillus alone, dampness alone, or bad ventilation alone, would not produce the disease.

DR. W. F. R. PHILLIPS said that the changes in the life of the air were attributed by some to increased temperature and humidity and presence of CO_2.

DR. S. G. BONNEY, of Denver, read a paper on

SOME PHASES OF THE TUBERCULOSIS PROBLEM IN COLORADO.

In this paper the author pointed out the injustice done to Colorado bystatistics which apparently showed an increase in the number of those becoming consumptive in that State, and showed that the actual increase was very slight. He noted the number of tuberculous children, and the comparative frequency of tuberculous meningitis. The influx of consumptives from other States complicates the problem.

DR. J. C. WILSON said that often climatic treatment was available in the region where the individual lived, without the risk and expense of a long trip.

SECOND DAY.

In the absence of DR. JACOBI, DR. BABCOCK, of Chicago, opened the meeting.

DR. ARNOLD C. KLEBS, of Chicago, who was not present at the first session, when his paper was due, read a paper on

THE CONSTRUCTION AND MANAGEMENT OF SMALL COTTAGE SANATORIA FOR CONSUMPTIVES.

He said that the chief purpose of small sanatoria was to scatter institutions for consumptives throughout the country, and their chief advantages the wholesome, regulated diet, arrangements for

an abundance of fresh air, cheerful surroundings and proper exercise. He advocated making the exercise of a useful but mild character, like gardening. The sanatorium should be located in the best possible spot, and near a large city, where good markets are available. The speaker then gave a sketch of how such cottage sanatoria should be built, and showed diagrams of some already in operation. The usual plan is to have a long building forming an obtuse angle, the part within the angle forming a sheltered court with porches, and suitable as a place for outdoor exercise for the patients, or two or three cottages connected by galleries adapted to our double season, enclosed and sunny in winter, and with removable sides and roof for summer. The management should be under one skilled head, with authority over the patients, and the patients should have practical hygienic instruction.

DR. H. P. LOOMIS called attention to the immense expense of the plan suggested, which was all right for people of means, but impracticable for the majority. He further said there was no doubt as to the advantages of the sanitarium treatment, and deplored the fact that we in this country were so far behind other countries in this respect.

DR. C. F. MCGAHAN advocated very small sanatoria, where the doctor in charge can see each patient at least twice a day, and personally supervise their habits and exercise. He said it could be done for eight to nine dollars a week per capita.

DR. E. O. OTIS believed that the future treatment of tuberculosis would be by sanatoria, and stated that a year ago Massachusetts voted $175,000 for a sanatorium, and had just recently voted $150,000 more to build another.

DR. EDSON also objected to the plan proposed by Dr. Klebs, on the ground of expense, and suggested that every doctor could carry out the sanitarium principle, by a one or two patient sanitarium, located in a carefully selected house under proper management.

DR. BALDWIN stated that at Saranac the expense per capita was from seven to eight dollars a week, but that Dr. Trudeau did not receive any compensation out of this.

DR. NEWTON thought that it would be a good thing for those of little means with incipient tuberculosis to go on four or six weeks' tramping tours under a competent head, as this sort of outdoor life would stimulate the vital functions.

In rebuttal to the objections to his plan on the ground of expense, DR. KLEBS said the project he proposed was merely a cheap boarding-house, three cottages connected by galleries and built with a special view to their use.

Dr. H. P. LOOMIS, of New York, gave

SOME PERSONAL OBSERVATIONS ON THE EFFECT OF INTRAPLEURAL INJECTION OF NITROGEN GAS IN TUBERCULOSIS.

He described how, after numerous experiments on animals with all sorts of materials, fluids and gases, he at last found nitrogen to be the only one that did not rapidly absorb, or cause some other trouble. Dr. Loomis claims for the method that the injection of from 50 to 200 cubic inches of absolutely pure gas will not be absorbed for from three to six months, will rapidly diminish expectoration, improve appetite, increase weight, and above all stop hemorrhage, where all other methods fail, but it seems to have no marked beneficial effect on the affected lung substance. It arrests the further progress of the disease.

DR. H. L. TAYLOR said that he had tried the method in over a dozen cases, and had obtained exactly opposite results from those given by Dr. Loomis.

DR. R. H. BABCOCK expressed his surprise at Dr. Taylor's results, and said that the results in the majority of cases treated in Chicago were good. He believed the treatment was of value in giving the patient an upward start for health.

DR. DENISON asked if the same results could not be attained by some other method, unattended by such a shock, and referred to the successful use of strapping plaster to stop hemorrhage.

DR. STUBBERT said the nitrogen treatment was only effective when the lung was absolutely compressed, and stated that he also had used it with advantage to stop hemorrhage.

DR. BOARDMAN REED, of Philadelphia, read a paper on

STOMACH CONDITIONS IN EARLY TUBERCULOSIS.

He summarized his paper as follows: (1) In early tuberculosis the secretion of HCl is very frequently excessive, the peptic glands being in a condition of irritability which causes stimulating remedies of the creosote class to disagree and act injuriously; (2) oils tend to depress the secretory function of the stomach, and in consequence cod-liver oil is likely to help the cases which the creosote class of drugs hurt; but, on the other hand, hurts the cases in

which the gastric secretion is inactive, and the other ones in which creosote and its congeners often do good; (3) therefore it ought to be the rule to ascertain the condition of the secretory function of the stomach before pushing either class of drug; (4) when analysis of the gastric contents cannot be made, it is safer to combine creosote with cod-liver oil, so as to let one neutralize the other in its effect on the stomach; (5) the motor function is very generally depressed in tuberculosis, and must be restored before a cure can be effected. Drugs avail little in this direction, but diet, exercise, especially in the open air, faradism and abdominal massage, except where hyperchlorhydria complicates it, are the most valuable means of effecting the result.

DR. ANDERS called attention to the variability of HCl in this disease, and said that gastric symptoms depended on functional disturbances.

DR. J. EDWARD STUBBERT, of New York, gave the

SUBSEQUENT HISTORY OF PATIENTS APPARENTLY CURED BY ANTI-TUBERCLE SERUM.

He took up the cases he reported two years ago, and said there had been no relapses, and marked improvement in 78 per cent. of the cases. He then took each case in detail and gave the history up to date. Dr. Stubbert spoke of the difficulty of treating patients climatically, on account of the varying effect of the serum in varied localities.

DR. R. C. CURTIN, of Philadelphia, read a paper entitled

THE PHLEBITIS OF ADVANCED PHTHISIS, WITH REPORT OF CASES OF PHTHISIS FOLLOWING ABSCESSES OF THE HAND.

He gave several instances of phlebitis following tuberculosis, and quoted numerous cases where tuberculosis followed blows and falls, noting especially the prevalence of the disease among prize-fighters.

DR. NEWTON asked for statistics as to phthisis, and denied that the percentage was at all large.

DR. CURTIN, DR. BABCOCK, DR. ANDERS and DR. BRIDGE all instanced cases of the same and similar conditions that had come under their notice.

DR. J. M. ANDERS, of Philadelphia, read a paper on

THE DIAGNOSTIC VALUE OF TUBERCULIN IN TUBERCULOSIS.

He said the value of the tuberculin test depended on the fact that it permits the recognition of the disease in its latent as well as incipient forms, and, if it were used, more tuberculosis would not so often go unrecognized. Of over 2,000 suspected cases, 71.8 per cent. gave positive reaction, and of the undoubted cases the percentage was even higher. The two points in its use are moderate doses and its use in incipient stages of the disease. If this were done its use would become more popular and satisfactory.

SPLENOMYELOGENOUS LEUKEMIA WITH PULMONARY TUBERCULOSIS; REPORT OF A CASE.

This paper, by DRS. H. L. ELSNER and WM. A. GROAT, of New York, was read by title. Dr. Elsner stated that the condition was very rare, and showed charts illustrating the case.

At the business meeting which followed, the following officers were elected for the ensuing year: President, Dr. R. H. Babcock, of Chicago; First Vice-President, Dr. A. C. Peale, of Washington, D. C.; Second Vice-President, Dr. S. W. Langmaid, of Boston; Secretary and Treasurer, Dr. Guy Hinsdale, of Philadelphia. Dr. Abraham Jacobi was elected a member of the Council.

THIRD DAY.

On account of the number of papers still to be read, the meeting was called for at nine o'clock. The session opened with a discussion of Dr. Anders' paper on the diagnostic value of tuberculin, which closed Wednesday's session.

DR. BRANNAN opened the discussion by asking what the exact reaction of tuberculin was, beside the "grippy" symptoms it produced.

DR. CHARLES DENISON objected to the use of tuberculin in large doses in advanced phthisis, on account of its disintegrating influence on the affected lung area, and said that the starting dose in the Berlin Hospital was one-half milligramme. Tuberculin might produce local reaction even when there was no rise in temperature, and in small doses it sometimes increases the number of râles.

DR. H. L. TAYLOR objected to the statement that we should not use tuberculin as a therapeutic measure, saying that it often had some therapeutic value.

DR. A. C. KLEBS emphasized the importance of a uniform preparation of tuberculin, in order that the results of different observers might be compared with some advantage. He said there was no danger to the patient in cautious use of tuberculin, and that a beginning dose could be as low as one-tenth milligramme.

DR. E. O. OTIS brought up the fact that syphilis often gave the reaction when advanced tuberculosis would not.

DR. BABCOCK asked why he could not always suspect syphilis if that disease gave the reaction. He said that the dose might be from one-half to twelve milligrammes, and in the average case should be large.

DR. BALDWIN said that tuberculin was rarely necessary for diagnostic purposes. Larger doses are necessary for local tuberculosis in joints and other parts of the body than in pulmonary cases. He called attention to the tuberculin reaction in syphilis as a fruitful field for investigation.

DR. J. H. KELLOGG, of Michigan, read a paper on

THE HYDRIATIC TREATMENT OF TUBERCULOSIS.

He urged the value of cold-water treatment, saying that he had used it for over twenty-five years, with good results and many recoveries. Out of 151 cases noted more than 60 per cent. were permanently benefited, and a good percentage cured. The tonic effect of cold water is due to the action of the cold on the sympathetic nerves in the skin, and increased cerebral activity. The method of its use is very simple: first, friction with hand or dry towel; then sponge or mohair glove wet with ice water and rubbed briskly on neck, chest and arms, one part at a time, and quickly dried, and patient bandaged with wide three-yard strips of cheese cloth, and over this same-sized flannel. In full bath, start with moderate temperature and gradually reduce to 55° or 45°. Dr. Kellogg then gave a demonstration of his method on a subject.

DR. C. L. MINOR urged necessity of simplification of methods, such that the patient could apply them himself.

DR. R. H. BABCOCK protested against the use of the term "cured" as a result of the cold-water treatment, and Dr. Kellogg replied that water was not claimed to be a panacea, but merely a valuable adjunct to other methods.

DR. W. D. ROBINSON, of Philadelphia, read a paper entitled

PETROLEUM OIL IN THE TREATMENT OF PHTHISIS.

He said that the best preparation was a repurified oleum petrolatum of the United States Pharmacopœia, which is absolutely odorless, colorless and tasteless. The oil passes through the intestine unchanged, but has beneficial effects on nutrition. It has also the effect of rendering the intestine unfavorable to life of micro-organisms by starving and suffocating them, by cutting off the avenues through which they have their nourishment. The oil has beneficial effects in chronic bronchitis and in phthisis, and there is more gain from its use than from cod-liver oil, without any tax on digestion, appetite or food assimilation. It is valuable as a solvent for many drugs and as a means of conveying intestinal germicides.

DR. A. N. BELL, of Brooklyn, read a paper entitled

STAMINA: WITH SPECIAL REFERENCE TO THE CONSUMPTION OF FAT FOOD FOR ITS MAINTENANCE AND AS A PREVENTIVE OF TUBERCULOSIS.

This paper was published in our June number.

DR. S. E. SOLLY, of Colorado Springs, read a paper on

THE BLOOD CHANGES IN HIGH ALTITUDES.

He took statistics of blood counts from twenty-five students as a basis, and showed that in people going to Colorado the red cells and hemoglobin at once increase quite above that of the natives, but that in those who have been there for two years or more the blood count shows an intermediate position, which would seem to indicate that the climate soon loses its marked beneficial effects on the blood.

DR. R. C. NEWTON thought that the effect of tuberculosis on the blood was a good field for investigation.

DR. HAROLD WILLIAMS, of Boston, reported

A CASE OF MURAL ENDOCARDITIS

in which the remarkable features were the absence of pain, absence of murmur, and peculiar grouping of pathological lesions found at the autopsy held by Dr. Leary.

DR. BABCOCK said that a murmur was only a guide post to point the way to the trouble, and is of comparative unimportance in functional disease, where we must rely on the secondary symptoms. The presence or absence of murmurs in any given case will depend on the size of the orifice.

DR. J. MADISON TAYLOR, of Philadelphia, read a paper entitled

EXERCISES SUITABLE FOR CHILDREN SUFFERING FROM HEART DISEASE.

He said the embargo so often laid by the physician on all kinds of exercise in cases of this sort was often actually injurious, and showed how frequently when these children have been allowed increasing amounts of activity an actual benefit results. Carefully selected exercises can be made to afford a large amount of relief to many of the distressing symptoms which accompany and follow upon disordered states of the heart. The writer defines exercise as "the normal use of the bodily parts, not merely of the muscular system, but particularly the interrelation of the viscera, abdominal and thoracic, and their mutual co-operation." Dr. Taylor then emphasized the necessity of standing erect, and of proper attitudes, and the value of enforced breathing after a definite system, the rules of which he gave. His experience with children has convinced him that the most remarkable results may sometimes be obtained by the simplest forms of exercise.

DR. A. JACOBI said that in both acute and chronic cases of heart disease rest in bed was good, but that a watch must be kept that the rest was not prolonged too long. He agreed with the speaker as to the value of passive movements, and that the peripheral circulation can be fortified by some form of exercise. We must remember that in each individual there are from thirteen to fifteen square feet of skin, and if the circulation here is not attended to the heart has to suffer. Massage is a good treatment, but should only be done by a doctor or one who knows the courses of the blood and lymph channels.

DR. JUDSON DALAND, of Philadelphia, read a paper on

ANEURISM OF HEART; THROMBOSIS OF LEFT CORONARY ARTERY.

The speaker described a case of aneurism of the heart, characterized by absence of angina pectoris, and marked fibroid changes of septum of heart, with endarteritis of coronary arteries. The

patient was a man over fifty, and with a four-year history of heart disease, though quite well at the time of his fatal attack, which lasted twenty hours.

DR. R. G. CURTIN said cases of aneurism of the heart die quite slowly. He had seen a case where the sac would contain a pint of fluid.

DR. J. M. TAYLOR spoke of a case where there was a large sac, the treatment being gold wire and electricity, which did some good, the patient finally dying slowly from exhaustion.

DR. R. H. BABCOCK said that sudden death in the cases where fibroid changes of the heart septum were present was frequent.

The following papers were read by title:

"The Inadequacy of the Physical Signs as Indicating the Gravity of Pneumonia," DR. ANDREW H. SMITH, of New York.

"The Bath in Gout," DR. CHARLES C. RANSOM, of New York.

"Prognosis in Disease of the Heart," DR. JAMES B. WALKER, of Philadelphia.

"Some Thoughts on the Nervous System in Phthisis as a Basis for Treatment," DR. THOMAS J. MAYS, of Philadelphia.

STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA.

The fifteenth annual conference of this association was held at Atlantic City, N. J., June 1, 1900. The sessions were held in the Hotel St. Dennis. At the first session thirty-eight—about three-fourths of the whole number of members—were present.

After a formal greeting by the Mayor of Atlantic City, and the conclusion of the business part of the meeting, the following papers, as per programme, were read: "The Construction and Ventilation of School Buildings," Mr. J. Horace Cook, architect and supervisor, Philadelphia public schools; "An Economic Estimate of the Values of Perfect Ventilation in Schools," Dr. Bryce, of Toronto, Can.; "Legislation for the Protection of School Children in Pennsylvania," Dr. Benjamin Lee, Philadelphia; "The Age at Which Children Should Be Set to Work in School; Character of the Work; Hours of School Attendance Consecutively Per Diem," Dr. George McCutcheon, New Orleans; "Air Space in Schools, Its Influence on General Health, Its Influence in the Transmission of Disease, Its Influence in the Progress of Studies," Dr. Charles W. Truith, Augusta, Me.

But beside these papers, other phases of school hygiene were discussed—"The Use of Types, Prints and Blackboards in Their Relation to the Preservation of Eyesight," "The Principles of Lighting School Houses and Regulating Seating at Proper Distance from Charts and Blackboards," "Ventilation of School Buildings—Amount of Air Hourly Required, Natural Ventilation of the School Room, Artificial Ventilation and Mechanical Appliances," "Methods of School Heating and also Combined with Ventilation, Its Influence on Health and the Part Played by It in the Spread of Contagious Diseases."

Relation of State and local Boards of Health to outbreaks of diphtheria was discussed by Dr. Bailey, of Kentucky, and Dr. Tyler, of Colorado. What practical steps can be taken to secure general vaccination in our rural population? Discussed by Dr. Mitchell, of New Jersey, and Dr. McCormack, of Kentucky. Is it advisable for a State to provide vaccine virus? Discussed by Dr. Evans, of South Carolina, and Dr. Swartz, of Rhode Island. Should State Boards of Health be given a controlling voice as regards plans for public water supplies and sewerage systems? Discussed by Dr. Beatty, of Utah, and Dr. Probst, of Ohio. If the plague should pass the quarantine and enter your State? Discussed by Dr. Fulton, of Maryland, and Dr. Baker, of Michigan. Placarding of houses for contagious diseases; discussed by Dr. Cooper, of Delaware, and Dr. Kennedy, of Iowa. What are the most practical and successful ways of educating the public in the principles and practice of sanitary science? Discussed by Dr. Hurty, of Indiana, and Dr. Linsley, of Connecticut.

In the evening Dr. U. O. B. Wingate, of Milwaukee, President of the Conference, and Secretary of the Wisconsin State Board of Health, delivered his annual address, his subject being, "A National Commission of Public Health."

Dr. Wingate said he believed it to be the candid opinion of the great majority of physicians and sanitarians in this country that some national organization of public health, an organization separate and apart from any other service, devoting its extra time to public health work, should be created by Congress. It should be endowed with such powers as are consistent with the Constitution and presided over by a competent member of the medical profession, with headquarters in Washington.

Continuing, he said:

"To draft a bill to provide for the creation of such an organization that will meet with the approval and enlist the support of the

great majority of those interested in and affected by such legislation, is, undoubtedly, one of the most difficult tasks that any body of men can undertake. No body of men, in my judgment, is liable to entertain a multiplicity of views concerning such a matter as the medical profession. Physicians, as a class, do their own thinking. In their active professional lives they are obliged to reach conclusions for themselves, and each one reasons from his own standpoint, influenced more or less by his own experience and environment, and of necessity different conclusions are naturally reached.

"No doubt this lack of unanimity among the promoters of this proposed legislation has been one of the chief reasons for the delay on the part of Congress in enacting a law to create such an organization.

"A bill has been prepared, 'the Spooner bill,' and it is the product of years of study and experience in sanitary administration and constitutional law. Its strongest features are along educational lines. Its aims are to establish a far-reaching and substantial system of sanitation, which is not only educational, but executive as well. Its source of executive power is with the people, as each State and Territory has a voice in its administration. Its executive officer is to be a Commissioner of Public Health, a physician of experience and qualification, appointed once in six years by the President, thus removing the office, as far as possible, from any dangers that might result from a political appointment, the term of which holds only during the Presidential term. The fears that have been entertained by some that this Commission would be a political organization are purely imaginary. It is as far removed from political influences as it is possible to make an organization for such service. The second executive arm of this Commission consists of an Executive Committee, composed of nine members, including the Commissioner. This body has power to make and unmake rules and regulations at will. The Advisory Council, so termed, composed of a representative from each State and Territorial Board of Health, is one of the strongest and most important features of the measure. It is based upon our principle of government—'a government of the people, for the people and by the people.' No public health service in this country can ever be satisfactory under a 'one man rule.'"

The following officers were elected for the ensuing year: President, Dr. C. O. Probst, of Ohio; vice-president, Dr. Henry Mitchell, of New Jersey; secretary, Dr. G. T. Swartz, of Rhode Island; treasurer, Dr. J. A. Egan, of Illinois.

THE SYSTEM OF PUBLIC BATHS.

By GOODWIN BROWN. Author of Law Providing for Free Public Baths in Cities, Towns, and Villages of New York State, and Member of State Commission in Lunacy.

From the New York "Times," April 29, 1900.

It is altogether unlikely that Governor Roosevelt will have performed any official act more to his credit or lasting fame than his approval of the bill authorizing the appointment of a commission to report generally on the subject of tenement house reform. Judging from the large number of favorable press notices, the Governor has selected an admirable commission, and it is not unreasonable to hope that great practical results may be accomplished from the work of this body. It has been asserted that in certain areas in the city of New York the density of population is greater than anywhere else in the world, and, therefore, the problem of finding sufficient sanitary safeguards becomes stupendous. It is certain that if some remedies are not in the near future provided dire results may be anticipated. There is a limit to the overcrowding of human beings, and the limit is likely soon to be reached unless adequate sanitary measures are adopted.

Alfred Russell Wallox, in one of his most recent works, has pointed out that the plagues of ancient and modern times were and are filth diseases; that as cleanliness has increased, smallpox and other filth diseases have diminished, and that disease is likely to disappear wherever there is sufficient intelligence to insist that cleanliness shall everywhere prevail.

The foundation of general cleanliness is bodily cleanliness. Until a human being appreciates the latter, he will not insist on the former. Thus it is filthy streets and houses are tolerated. It is idle to expect, however, that people will observe habits of bodily cleanliness unless the facilities are provided. Tolstoi has observed that the great barrier which separates the rich and poor is the lack of bodily cleanliness, and quotes approvingly the sentiment expressed by John Stuart Mill that there can be no real civilization until people are taught the value of bodily cleanliness —that when this is fully accomplished it will be possible, and only possible, to make progress in other directions. To appreciate the

limited facilities afforded for personal cleanliness it is only necessary to refer to the report of the Mayor's Committee on Public Baths and Public Comfort Stations, transmitted to the Legislature March 25, 1897. This committee reported that out of 480 houses visited only 17 had bath rooms (page 16); that only 3 houses of each 100 had bath rooms. If only the above can be said for private facilities, how little can be said for the public facilities? So far as I am aware, there are at the time of the writing of this article only three public baths in Greater New York. With a population of over 3,000,000, none of these free, and with a capacity of only 1,500 baths per day (this is partly estimated, exact figures not being given). The public bath-houses referred to are open the whole year and supplied with hot and cold water, and should not be confounded with the river public baths—more properly called sewer baths, as special care seems to have been taken to locate them in close proximity to the mouths of the sewers. Thus, so far as public provision is concerned, an opportunity for a daily bath is afforded to only one person out of each 2,000 of the population. Such conditions are revolting to every properly constituted mind. With a per capita consumption of water said to be the greatest of any city in the world, practically little or no application of it is made to that object for which it is most needed—for bodily cleanliness is the first essential—by comparison religion, morals, and education could be dispensed with, and even crime tolerated for the present, if this reform could be obtained, for with it crime would soon disappear and the reign of religion, morals, and education would be supreme.

In a country which can "point with pride" to so many remarkable achievements in the way of the promotion of education, religious and material development, it is not easy to account for the general lack of interest in the subject, and I will not speculate on the matter. The fact is, however, that no progress whatever has been made worth speaking of, and what there is has been along wrong lines. I will only venture to give my opinion that the bath-tub is responsible for this lack of progress, paradoxical as this may seem, for the bath-tub is expensive, cumbersome and slow of operation, rendering its use on a large scale out of the question, to say nothing of its being highly dangerous as a source of contamination, and repulsive to the imagination. Reform was impossible so long as it could only come through the bath-tub. The tub in its most alluring form is objectionable in this, that it invites

and suggests still water, making easy the friendly application and interchange of noxious germs, whereas modern science proclaims running water as the only sure preventive of these disease-breeding agents. Coincident with the passing of the bath-tub is the passing of the roller towel, the mop, and the wash basin, and the substitution of the spray bath, the individual hand towel, the scrubbing brush, the washbowls with running water, and floured soap.

The United States is sixty years behind most other enlightened countries in this great reform. In 1842 the first public bath and wash room was erected in England, and from that time to the present great progress has been made in the building of these most important adjuncts to modern civilization. Millions have been expended in England and Continental Europe in the erection of public bath-houses, while their number reaches into the hundreds. Even the public schools in Germany are largely equipped with bathing facilities. Without actual verification of the fact, I think it is safe to assert that public bath-houses in the countries referred to are as common, if not more, as the public libraries in this country, and generally as imposing in appearance, and, I might add from my own standpoint, of far more utility—at least the baths should have the first place.

It is melancholy to think that Rome at the height of its glory had over 3,000 public baths, while New York, with over 3,000,000 of people, has only three.

Owing to fortuitous circumstances, my attention was several years ago called to the necessity of this reform. From 1889 to 1899 I was one of the New York State Commissioners in Lunacy. In 1889, in company with my associates, Dr. Carlos F. MacDonald and Henry A. Reeves, I visited and inspected the county poorhouses having insane persons in care and custody, with a view of making a report relative to their transfer to the State hospital for the insane. We unanimously reported to the Legislature in 1890 in favor of State care for all the insane, and our report was adopted in that year. And thus the foul blot of caring for the insane in the poorhouses was wiped from the statutes of New York. Without going into details as to the reasons which induced our report, I will only mention one. We found that in every instance the bathing facilities were utterly inadequate—even admitting the advisability of the use of tubs. The smallest of these institutions contained as many as 30 insane persons, and the largest 400—in

no instance did we find more than two tubs in one institution, and, consequently, the practice of bathing more than one patient in the same water was general. It was admitted in many instances that as many as six or seven were bathed in the same water. In one instance it was freely stated that care was always exercised to bathe those having skin diseases last—a degree of thoughtful foresight which we duly and at once commended. Nevertheless we were deeply impressed that immediate and drastic reform methods should be adopted.

In the following year—1891—the attention of the commission was attracted to the new method of bathing adopted in the soldiers' barracks in Berlin—namely, the rain or spray system. We immediately conducted, so far as I know, the first trial of this system of bathing the insane in any public institution in this country, at the Willard State Hospital, under the direction of its Superintendent, Dr. C. W. Pilgrim. The experiment was immediately successful, and from that time the method became general throughout the State hospital system of New York. Its advantages, aside from its freedom from danger, are very great from an economic standpoint, as the amount of water required by the tub system is twenty-one gallons, while the spray system only requires three gallons. Moreover, the cost of fixtures is much less. The amount of coal used is much less; the average temperature of water during the whole year is about 50 degrees, while for bathing purposes it must be raised to at least 110 degrees, and this cost for 25,000 people, with an average of only one bath per week, was considerable.

By this experience I was led to believe that this method of bathing could be applied on a large scale in the cities and large towns. In 1892 I secured the enactment of permissive legislation for the erection and maintenance of free public baths in cities, villages and towns, giving them the right to issue bonds for the purpose. Mandatory legislation was refused on the ground that it would be too great an encroachment on the rights of localities. For three years nothing was done—not one municipality showing any desire to avail itself of the privilege. In 1895 I again proposed mandatory legislation, and the bill was introduced by the Hon. G. W. Hamilton, of New York. The committee invited the local boards of health to appear—only one board did appear, and then to oppose. The bill was passed without serious difficulty, and, being applicable to cities of the first and second class, it escaped the possible

opposition of several mayors. The bill became Chapter 351 of the Laws of 1895, and reads as follows:

Section 1. All cities of the first and second class shall establish and maintain such number of free public baths as the local Board of Health may deem to be necessary. Each bath shall be kept open not less than fourteen hours for each day, and both hot and cold water shall be provided. The erection and maintenance of ocean or river baths shall not be deemed a compliance with this section. Any city, village or town having less than 50,000 inhabitants may establish and maintain free public baths, and any city, village or town may loan its credit or may appropriate of its funds for the purpose of establishing such free public baths.

So far as I am aware, this is the first general State legislation ever enacted in this country; certainly it is the first compelling the erection of public baths and providing they shall be free. For two years nothing was done under the act—the first bath erected under its provisions was opened January 1, 1897, in the city of Buffalo. It has a capacity of 1,000 baths per day and cost $8,000, exclusive of the land. In drafting the act I overlooked making provision for soap and towels, and thus the city authorities might have made a charge for them; the matter was seriously discussed for some time, but finally it was decided to furnish them without cost. Each bather is given a new piece of soap and a clean towel. The bath became at once very popular and showed it was appreciated. In Rochester opposition was made to the statute and a mandamus was procured, the Supreme Court sustaining the statute. The bath was erected there on substantially the same lines as the Buffalo bath, but its cost, exclusive of land, was about $5,000. In Albany the money has been appropriated, plans prepared, and the contract is soon to be let. The cost of this bath is $22,000, exclusive of the site, an amount which, according to the experience already had, should provide at least two baths instead of one bath. I omitted to say that in Buffalo I am informed the erection of a second bath has been begun.

In Syracuse and Troy the subject has been extensively discussed, but nothing done toward complying with the statute.

In Greater New York the first bath is nearing completion, and is likely to be open in the course of a month or two. It is located on Rivington Street, near the water front, situated in a decidedly crowded portion of the city. The structure is somewhat pretentious, and will cost a little over $100,000, inclusive of site, I think.

It has a capacity of about 3,000 baths per day, allowing each bather twenty minutes. There are sixty-seven spray baths—one-third each for men, women, and boys. The bath compartments are so arranged as to secure absolute privacy, the size of the stalls permitting ample space for dressing and the care of the clothing. Hot and cold water are provided and applied by stationary sprays, the temperature of the water being regulated so that there can be no danger from scalding if warm water exclusively is desired. The sanitary arrangements are such that there can be no danger from contamination, while absolute cleanliness can at all times be insured.

With this beginning, which is a good one, the erection of public baths should proceed rapidly, and it is to be hoped that within five years New York can no longer be reproached with having the most meagre bathing facilities of any great city in the civilized portion of the world while possessing the most magnificent water supply, or, at least, a supply which will permit of a greater daily per capita consumption than any other city.

I should say that in procuring the enactment of the legislation providing for the erection of these free public baths I was only actuated by a desire to promote the public health by placing the most efficient means at the disposal of the public absolutely free of cost to the users, except, of course, the individual cost arising from general taxation. I conceive that an abundant supply of water with the facilities for applying it is as much one of the inherent rights of man as air.

UPLIFTING OF CUBA.

From "The Boston Herald," April 29, 1900.

The following interview with Dr. Morton Prince, of 458 Beacon Street, who has recently returned from a trip to Cuba, is valuable because the doctor speaks not superficially, but as one who has made a broad and intelligent study of the island. He came personally in contact with the best classes of the people and with the least enlightened classes; he visited the hovel as well as the palace; he listened with an impartial ear to the officials of the United States Government and to the natives, who welcomed him to their clubs. So the opinions given below are not based upon the doctor's per-

sonal impressions alone, but also upon what was told him by people who represented a wide variety of business, social and political interests.

When asked about the sanitary condition of Cuba at the present time, the doctor said:

"The first thing which struck me, upon arriving in Havana, was the cleanliness of the city. It was as clean as any city I have ever seen, unless possibly another city in Cuba. I even looked into the nooks and corners for dirt, but failed to find it. In fact, our government has made Havana one of the cleanest cities in the world. Compared with it, the average American city seems very dirty. There are very few smells in Havana, and the streets are well paved and cared for. I doubt if there is anywhere in that city a street as dirty as may be found in Boston or New York. As I drove up to the hotel in Havana I noticed the street cleaning brigade sweeping away with a vigor that I have never seen displayed in this country.

"Matanzas is even cleaner than Havana, for its streets are macadamized with a yellowish-white limestone, and they are kept so beautifully clean that they remind one of the deck of a yacht. The improvement in the condition of the sanitation in Cuban cities has been a work of the highest order. As a natural result, the death rate became lower than it had been in years, and yellow fever practically disappeared. During the past year, however, there was a slight increase in the number of cases of yellow fever.

"A medical officer showed me a diagram which brought out an interesting, and possibly significant, fact about the increase in fever. From this diagram it would appear that the increase in yellow fever followed almost parallel with Spanish immigration. It will be remembered that, after the war, many Spaniards returned to Spain. With their departure and the general cleaning up of the city there was a diminution of yellow fever. Later, however, many of these people, finding that they could live in Cuba in peace, returned there, and with their return there was an almost parallel increase in the amount of fever. This is explained by the fact that these Spanish immigrants form crowded communities and lived in a rather dirty way. There is absolutely no relation between American immigration and the development of yellow fever. I don't believe that, with our government in control, there is anything to be feared from the spread of this disease."

In reply to another question, Dr. Prince said that the United States military government had not only cleaned the streets of Cuban cities, but had gone into the hotels and houses and had improved domestic sanitation, compelling the introduction of modern plumbing, etc.

"In the hotel at which I stopped," he continued, "there was modern plumbing, and everything seemed to be as nice and clean as could be expected in a building so old. I heard it said, before I went to Cuba, that ladies would have a rather rough time of it if they should travel there, but large numbers of ladies are going to Havana now, and, so far as I could see, there was no reason why they should not be as comfortable in Havana as in any city of equal size on the continent of Europe. I was told that when Gen. Wood first went to Santiago the filth in the court yards of the houses and in the houses themselves was something indescribable, but all this has been changed. At first the natives complained because of the enforced cleanliness, but now they are very much annoyed if the sanitary carts fail to come around."

When asked about the climate of Cuba and the effect which residence there would be likely to have upon the physical condition of Americans, Dr. Prince said:

"The climate of Cuba from November 1 to May 1 is delightful. It is neither hot nor cold. It seemed to me far superior to and pleasanter than the climate of Florida. When I left Havana, where the weather was splendid, and crossed over into Florida, I found myself hot and uncomfortable. The difference in the atmosphere of Cuba and Florida is especially noticeable when riding in the railway cars. The atmosphere in a car in Cuba is pleasant; the atmosphere in a car in Florida soon becomes hot and stifling. This difference, of course, is due to the fact that Cuba is an island.

"I think that the possibilities of Cuba as a health resort are very great. The island would at once become very popular if some one would put up a big, modern hotel in Havana. I understand that steamship companies have on foot a scheme to build such a hotel, and I learned that H. M. Flagler and others have the project under consideration."

When asked to say something about the people of Cuba, the doctor replied:

"I went to the island with an impression which, I fancy, is shared by a good many other Americans, that the Cubans are an

inferior race. This impression, I soon found, was a wrong one. Of course, a city like Havana has its different classes, like a city in any other country, but there are as nice people and as refined and intelligent people in Cuba as can be found anywhere else.

"In the eastern part of the island negroes predominate and form about one-third of the entire population of the island, but in the western end of the island the whites are in the large majority. There is a large class of poor, illiterate whites who can neither read nor write. I have heard it stated that they form nine-tenths of the Cuban population. The Spanish never established public schools on the islands, and the ignorance of this enormous proportion of the populace is not their fault, but their misfortune.

"Of the upper classes, I can only say that they are cultivated, intelligent and able, and differ in no respect from the same classes in other countries. The ladies and gentlemen of Cuba have the highest refinement. If you visit a club in Havana you could not tell, except by the language spoken, that you were not in a first-class club in the United States or in Europe.

"The educated Cuban is very interesting to talk to, and I met some of the ablest of the native lawyers and business men, and from conversation with them derived the most delightful impressions.

"The trouble with Cuba, from the political point of view, is not that there are not plenty of bright and able men, but that they have had no experience in political government. In the old days the Spaniards monopolized all the offices, and the Cubans know no other standard of government than that set up by Spain.

"Moreover, by nature the Cuban is excitable and ruled by sentiment. He is a dreamer. But there is no reason, in my opinion, why the people should not learn to govern themselves as well as any other people. There is plenty of innate ability, and it is only a question of education. The United States has the same work to do in Cuba which the English had to do in Egypt. When we've given the Cubans a correct standard of administrative government, they will learn to live up to that standard. But we must first put the house in order before expecting them to keep it so.

"We are pledged to make Cuba free. This pledge we must keep. But before doing so there is an immense amount of work to be done. Schools have got to be established, the courts and judicial procedures reformed, the farmers helped to return to their

farms, the different departments of government reorganized, and the old, vicious Spanish methods of administration done away with. The Cuban does not know how to do this at present. We will make the greatest mistake in the world if we withdraw our control before this is done. If we do, Cuba will relapse again into the old system, and we shall have the work to do all over again. We ought not to withdraw for five years to come. The present military government, with the gradual introduction of subordinate Cuban responsibility, is the best possible for this work."

When asked regarding the present aspect of Cuba and its industrial and agricultural condition, Dr. Prince said:

"The great cry now is for capital, but capital is afraid to go there until the question of annexation or of independence has been settled. In a railway train you pass through miles and miles of splendid country with the richest soil. Much of it is entirely uncultivated, and one sees almost no cattle. During the war with Spain the Cuban farmers' houses were burned and their cattle seized. Now, when they are ready to resume operations, they have no capital. Gen. Wood is at present engaged in distributing farming implements among the needy and deserving.

"One finds that the sugar planters hesitate to increase their plantations because of this doubt as to the final disposition of the island. Nor are the mills being rebuilt. Some of the mills cannot obtain enough cane to keep them going. If I were a young New England farmer, I should go to Cuba. Land can be bought there cheaply, one can plant without reference to the seasons, and it would seem as if spring vegetables might be profitably grown for the American market.

"There is, too, promise that Cuba will be used for orange growing. I met a young American whose orange grove in Florida had been ruined by frost and who was raising oranges in Cuba. The quality of the Cuban orange, which grows practically wild, is fine, and can be improved by cultivation."

Referring to the fact that the ordinary Cuban farmer has no stability in the soil, Dr. Prince said:

"Most of the farmers do not own their own land, but hire it from the large land owners. It seems to me that one of the steps our government ought to take, if it is feasible, is to provide some means whereby the farmer can become a landed proprietor. There is plenty of land to be bought in Cuba, and the reason is that the

people are afraid to buy it because of the doubt as to what kind of a government the island is to have."

"What kind of a government do the mass of the people seem to want?" the doctor was asked.

"Well," he replied, "there is a very large element, including the military party and Cuban patriots, which is very anxious for independence, but the merchants, planters and property owners generally want annexation. As to the Spanish element in the population, it is very hard to gauge that, although it is usually said that they are in favor of annexation. The lower classes seem indifferent. You can get as many opinions as there are people. Still, it should be said that everybody seems satisfied with our government, as a government. Some of the individuals who compose this government, however, have not entirely escaped criticism. Gen. Ludlow, for instance, is very unpopular in Cuba because of his arbitrary ways and lack of tact, but he has done splendid work there. Gen. Wood, on the other hand, is very much esteemed and universally regarded as the right man in the right place."

Every one remembers how singularly the reconcentrados sank into oblivion after the war, nominally undertaken for their deliverance, began. A great many Americans have been wondering what became of the poor reconcentrados. Dr. Prince was asked if he could throw any light upon this subject, and he had, it seems, attempted to solve this puzzle.

"I met," he said, "two men upon whose estates reconcentrados had been quartered, and was told that the story of their misery had never half been told. A great many died while under Spanish rule, and the rest seem to have drifted as beggars into some of the cities and to have died there."

CUBAN POPULATION.

The total population of Cuba, according to census returns June 16, 1900, is 1,572,797, including 815,205 males and 757,592 females. There are 447,372 white males and 462,926 white females of native birth. The foreign whites number 115,760 males and 26,458 females. There are 111,898 male negroes and 122,740 female negroes. The mixed races number 125,500 males and 145,305 females. There are 14,694 males and 163 female Chinese.

The population of Havana City is 235,981, and of the Province of Havana 424,304. The population of the Province of Matanzas is 202,444; of Pinar del Rio, 173,064; of Puerto Principe, 88,234; of Santa Clara, 356,536, and of Santiago, 327,715.

Of the total population of the island, 1,108,709 persons are set down as single, 246,351 as married, while 131,787 live together by mutual consent. There are 85,112 widows.

Of the total population, according to citizenship, 20,478 are Spanish, 1,296,367 are Cuban, 175,811 are in suspense, 79,526 are of other citizenship, and 616 are unknown. The Spanish by birth number 129,240. Of the children ten years of age and over, 49,414 have attended school. Of the total population, 443,426 can read and write, and 19,158 have a superior education.

The table on citizenship, literacy and education is regarded as specially important as forming the basis of the suffrage about to be conferred. Because so many citizenships are still in suspense, and for other reasons, the returns are not quite complete, but the conclusion is drawn that there will be at least 140,000 qualified native Cuban voters under the proposed basis of suffrage, and as against this there will be 55,767 Spaniards whose citizenship was in suspense when the census was taken, less the number who have since declared their intention to preserve their Spanish citizenship and plus illiterate Spaniards, not declared, who are the owners of property. It is not believed that there will be any great number of the latter class, as the total number of illiterate Spanish males over twenty-one years old is 17,426. The comparison shows a much greater preponderance of Cuban voters than was expected. There are 187,826 white adult males who were born in Cuba as against 96,083 born in Spain; 6,794 born in other countries, and 127,300 colored.

The tables, which are to be published simultaneously in this country and in Cuba, while in the nature of a compendium, contain much detailed information of interest as to the character of the population. For instance, it is shown that males are in excess in the total population, except in Santiago, though the female whites outnumber the male whites, except in Pinar del Rio. Among the negroes and mixed races the females are in excess, while among the foreign whites the males are largely in excess.

The negroes are in the minority in Cuba, constituting only 32 per cent. of the population, being most numerous in Santiago, where they constitute 43 per cent. The native whites constitute

more than one-half the population, or 58 per cent. The proportion of children under five years of age is unusually small, but the proportion under twenty-one years is normal; about one-half the population. Only 15.7 per cent. of the adults were married. Nearly nine-tenths of the inhabitants were born in Cuba. Nine-tenths of the children less than ten years of age do not attend school; 43 per cent. above ten years are literate.

DISEASES IN THE PHILIPPINES.

From the "Boise Statesman," April 9, 1900.

The following is an abstract of a very interesting paper that was read before the Southern Idaho Medical Association by Dr. W. D. Springer, of Boise, who was surgeon of the Idaho regiment in the Philippines:

Under the same favorable circumstances medical and surgical diseases in the Philippines are not materially different from what they are in the United States.

We had nearly all the diseases of the temperate climate and some that were peculiar to the tropics to contend with. Medical science has proven that all diseases are due to germs, and that a high and humid atmosphere favors the rapid proliferation of many pathogenic germs and retards or kills other germs. As examples, Dhobie itch and tropical ringworm spread very rapidly in the tropics but die out on going north. Scarlet fever epidemics are unknown in the tropics.

Other diseases are communicated or spread through the medium of an insect or fly. The mosquito is held responsible for the spread of several diseases, malaria being the one which most concerned us.

I do not think the natives are more prone to disease naturally than we are in this country. Of course, they suffer from many diseases which are preventable under proper sanitary conditions. As an example of this is the continuance and spread of leprosy and the plague in the tropics.

The Americans, on landing in the Philippines, were more susceptible to diseases than the natives for many reasons, the high, moist atmosphere, the unsanitary surroundings, and, worse than all, the inability to change their American stomachs. They used the same food as the troops in Alaska. I do not believe the high

temperature of the Philippines was the direct cause of disease, but did cause such conditions as heat-exhaustion, prickly heat or tropical debility.

Among the troops, the diseases we had to contend with most frequently were malaria, smallpox, typhoid, dysentery, tropical diarrhœa, intestinal parasites, skin diseases and surgical cases.

Typhoid was quite frequent with the Americans, especially before they became acclimated and before they were aware of the necessity of taking special caution in regard to what they drank and ate. The soldiers bought and ate the fruits offered for sale by the natives, and these often contained the germs of disease. The natives sold a drink called bino, which had a very deleterious effect on the heart and system. I have known men to be thrown into convulsions from one day's drinking. It was distilled from rice and was sold at 1 cent per glass.

The native houses are raised on posts from three to four feet above the ground, and, in connection with the house, in the rear and on the same level, they have their water closets. These closets are open and on top of the ground. Their wells were probably twenty feet away, and no doubt contaminated. I believe the drinking of water from these wells was a frequent source of infection in typhoid.

Amœbic dysentery was probably the most frequent and most fatal disease we had to contend with. Post mortem examinations showed the intestines to be filled with ulcers. They seemed to be in a gangrenous condition. In an acute attack the majority of cases would apparently recover and return to the line, where they would be under the same conditions as before the first attack, and, as a consequence, would have another attack. If they did not succumb they were very liable to be left with chronic dysentery, for which the only sure remedy was to leave the tropics.

Intestinal parasites were very common among the soldiers, ascoris lumbricoides being the most frequent. I have had patients come to me very pale and frightened and show me a worm from 12 to 18 inches long, which they had vomited or drawn from their throats with their fingers. Tape worms were also quite frequent.

Manila Itch.

Among the diseases of the skin I wish to mention particularly Dhobie itch, prickly heat and tropical ringworm.

Dhobie itch—or, as is commonly known, Filipino itch—is of

parasitic origin and peculiar to the tropics. It spreads very rapidly during the hot, damp season. It attacks first the perineal region and the axilla. After the acute stage is over and the inflammation has somewhat subsided, scales rub off and get down about the feet, where it spreads. The burning and itching is much worse at night, causing much suffering. The patient unconsciously scratches the parts, which causes, in many cases, boils. The regions occupied by the disease always remain pigmented. This trouble was almost universal among the troops. It can be avoided by changing underclothes every day and keeping parts dusted with some dusting powder. This, of course, was out of the question with the troops.

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Tropical ringworm is peculiar to the tropics and was very common in Manila. It affected dogs as well as people. It differed from our form of ringworm by the absence of inflammation around the patches, by the large size of the scales and non-involvment of the hair, etc. It does not affect the perineal region and axilla like the Dhobie itch.

Deaths from Smallpox.

We had this disease all through the year in Luzon. The troops suffered severely from it. I believe the report of the surgeon-general shows over 200 deaths from smallpox. This is frightful when we know this should have been prevented by proper vaccination. A great many of the Western volunteers had never been vaccinated. The first vaccine furnished was not good, only a small percentage taking. Some of the men objected to being vaccinated and applied substances to kill the virus. We had but six cases in the First Idaho, although they were almost constantly exposed.

I vaccinated the regiment over one dozen times, or until it showed no reaction or activity in each case. In other words, they were rendered immune.

I have seen the cases in this city, and it is smallpox. It is not Filipino itch. It is smallpox. There are people, and, I am sorry to say, doctors, who say differently. All I have to say to them is, if they ever saw a case, go and see these cases before passing their opinion. Now, what I wish to impress upon you is that vaccination renders the subject immune from smallpox. It may require several vaccinations. When the virus will no longer cause a vesicle or show activity the patient is safe from smallpox the balance of his life.

THE CONQUEST OF TYPHOID.

From "New York Evening Post," April 21, 1900.

Perhaps it is presumptuous to speak of the conquest of typhoid fever in a country where in every year 300,000 persons are attacked by it, and 50,000 die of it, but all conquests have a beginning, and it will be demonstrated that the number of victims is annually decreasing in those regions where the proper preventive action has been taken.

Sixty years ago people thought of it was caused by a mysterious dispensation of Divine Providence, but they did not inquire as to why these mysterious visitations should be more numerous in September and October than in other months, or why, if it were a retribution, it should be executed on the people who bought milk from some particular dealer, while all the rest of the citizens were exempt. It did not occur to people that they were to do anything but yield in dumb, languishing submission to the inevitable. But the spirit of inquiry was abroad, and there were people who reasoned that every physical effect must have some adequate cause, and among these persons was Dr. Austin Flint, then practicing in Buffalo, and afterwards President of Bellevue College, New York. A remarkable opportunity came to this remarkably competent man, and there is no measuring the beneficent consequences that have flowed from the thoroughness of his investigations and his astuteness in perceiving the bearing of the facts in the case. He wrote out a careful account of the entire episode for the Philadelphia "Medical Times" of July, 1845, in an article called "Typhoid Fever at North Boston, N. Y., in 1843." A short time before, in response to an offer of a prize, seventeen essays had been submitted to the French Academy, in which thirteen maintained a belief in its contagiousness, but a book designed for medical students in America mentioned non-contagiousness as a feature which distinguished it from typhus. This shows how much the profession was at sea. If Dr. Flint had undertaken to devise an experiment to uphold his opinion of the contagiousness of the disease, he could not have planned one more complete in all its details than the one which came to his hand ready made.

THE VISITATION AT BOSTON.

North Boston was a village about eighteen miles from Buffalo. It was a well-drained locality in which there had been no typhoid

or other fevers, and in no part of the county had it occurred, up to the date of the outbreak he describes; it was a novel disease to the physicians called upon to treat it. "The village consisted of only nine families, all living within an area a hundred rods in diameter; but the few houses in which the disease occurred were closely grouped together, the house farthest removed from the tavern being only ten rods distant. Forty-three persons made up the entire community. On the 21st of September a young man from Warwick, Mass., being on a journey westward, took lodgings at the tavern kept by a man named Fuller. He had been ill for several days, and had kept on his journey until he felt unable to proceed farther. He remained at the tavern, and died on the 19th of October. Dr. Timothy T. Lockwood attended him, to within nine days of his death. A 'Thompsonian' doctor was then called, who, after a few days, was succeeded by Dr. Allen, a partner of Dr. Lockwood. Drs. Lockwood and Allen declare that his symptoms were exactly those of the subsequent cases." Dr. Flint learned afterward that there were several cases of typhoid at Warwick at the time the young man left. Between October 19 and December 7 twenty-eight of the forty-three persons in North Boston were attacked with fever, and of these ten died. Seven cases and three deaths occurred in the family of the tavern-keeper. In another family there were seven cases, five of which proved fatal.

It can be imagined that the little village was in a state of panic and the doctors divided in opinion, as they had a new, and to them a mysterious, disease to deal with. Three families escaped, and one of these, named Stearns, was at bitter feud with Fuller, the tavern-keeper. Stearns lived four rods from the tavern. The two families had no intercourse, and the story was started that the disease was produced by poison introduced by Stearns into the families affected. Fuller and the other families in the vicinity were accustomed to get their water from the well situated near the tavern. It was charged that Stearns had poisoned the well. Several pumps were placed in it, and an effort made to exhaust the water, but without avail. Some facts looked dark for Stearns. Up to a short time before these happenings, Stearns had taken the water from Fuller's well, but owing to the hostility between the families, Fuller had forbidden Stearns to use it, and he had been obliged to dig out and deepen an old well of his own, and another of the families which did not take water from Fuller's well escaped.

ACCUSED OF POISONING A WELL.

The majority of the community believed in the poison theory. Stearns, conscious of innocence, began a suit for slander, which was finally settled by the payment of $100 by the party prosecuted. Most of these villagers were poor, and an application was made that a physician should be sent from Buffalo to aid in inquiring into the origin of the disease. The choice fell on Dr. Flint. He knew the disease of old, and he at once made an autopsy on a child of twelve years, just dead, and took careful notes at the bedside of nine cases then in progress, and engaged the interest of Dr. Camp, an intelligent practitioner, to keep careful records of all subsequent cases. All these sources of information left no doubt that the disease was typhoid—and the next step was to account for its production and diffusion. The decision was that the disease was transported to North Boston by the sick stranger who died after twenty-nine days in a tavern that was the daily resort for the members of all the seven families save the one which had been interdicted by the innkeeper. Twenty-three days after the arrival of the stranger the various victims began to be attacked. Stearns and his household did not see any of the sick ones, and, as the general belief was that the sickness was caused by water poisoned by Stearns, no pains were taken to avoid intercourse with the sick—and, while Dr. Flint at once accused a contaminated well as the principal culprit, he did not deny that there were other modes of acquiring the contagion. His article describing the outbreak proved to be epoch-making, and put a multitude of medical observers on the right scent. In all the general treatises on typhoid fevers, this study of Dr. Flint's is the classic story that first truly points the way to their real cause.

In England, a few years later, Dr. William Budd traced an outbreak of fever from case to case, and village to village, till he had produced a clear demonstration, and had concentrated his observations in a book that was in press at the time of his death. He alone of all the active medical men saw the truth clearly, that typhoid fever always comes from a seed or germ that has been produced in the body of some previous case—and only one other doctor in England agreed with him—a venerable retired practitioner, who, with philosophic insight, discerned the bearing of Budd's studies, and gave him moral support. While Budd was engaged in his investigations, an occurrence that strengthened his belief was brought to his attention. At a ball in Wales, which took place in

a tavern, a distant wing of which held a man desperately sick with typhoid fever, the dancers regaled themselves with lemonade made with water that came from a well very near the wing. Within ten days nearly every one of the dancers was down with typhoid. Dr. Thorne traced the origin of over three hundred cases in Caterham to an individual who was not sick in bed, but was a genuine case of "walking typhoid." In this country, the most striking case was that of Plymouth, Pa., where, in the spring of 1885, 1,071 cases were traced to a single person, the infection taking place through polluted drinking water. In the annals of the various State boards of health during the last thirty years there are recorded enough local epidemics from infected milk—which means infected water—to fill an encyclopædia.

The first step toward the conquest of an enemy is to learn what and where he is, and Pasteur's studies led to the discovery of the *bacillus typhosus*—the seed from which comes typhoid fever. The bacillus itself is so small that it takes 10,000 to cover an inch, but with a microscope that magnifies a thousand diameters, giving a surface multiplied a million times, there is no difficulty in making out its main features. It resembles a tiny black spider with something that might be taken for feet (cilia) at either end, and small as it is, can be easily differentiated from other bacteria.

Very lately some experiments have been made to show how bacteria are transferred from point to point underground. Two pits were dug in a forest near Strasburg, and the experiment was conducted with all the care and thoroughness of German scientists. Into one pit were put the *micrococcus prodigiosus* and the fluorescent *vibrio*. It was found that in an hour the *micrococci* and in two hours the *vibrios* had passed through the twenty-four feet of gravel between the pits. The detail is too elaborate for description here, but those who are interested will find the full account in the "Zeitschrift für Hygiene." The interspaces between fine sand would easily allow the passage of bacilli that measure but a thirty-thousandth of an inch in diameter, and it requires but little imagination to see exactly how country wells become infected so that typhoid is distinctly a disease of the country, when contrasted with the much-maligned city. Having taken the dimensions of the enemy, the best methods of conquering him, and the progress already made, will be considered in a future article.

MRS. H. M. PLUNKETT.

THE FILTERING POWER OF THE SOIL AND THE CONVEYANCE OF BACTERIA BY MEANS OF SUBSOIL WATER.

At the instance of the Town Council of Turin, in conjunction with the water works company, a commission was appointed in March and April, 1896, comprising authorities in hygiene, bacteriology, chemistry, engineering and geology, to study and report upon the character of the soil above and on either side of the intake of the filter galleries connected with the water works of Valsangone, and Drs. F. Abba, E. Orlandi and A. Rondelli were placed in charge of the bacteriological researches connected with the inquiry.*

The principal matters they were called upon to investigate were the nature of the soil and its suitability for filtering purposes, also the extent to which bacteria derived from the upper layers were capable of penetrating into this subsoil, and the effect of surface pollution upon the quality of the water entering the filter galleries. It was obvious that for this purpose it would be necessary to employ pure cultures of some non-pathogenic micro-organism, not of common occurrence in the Turin water supply; one, moreover, of ready and rapid growth in ordinary nutritive media, and capable of easy recognition by some well-marked property, such as the production of coloring matter. Nothing could be more suitable for the purpose than the bacillus prodigiosus, which was used in these tests.

An account also is given of the method of cultivation adopted of the mode of adapting the area of land selected for the experiments, and of preparing and introducing the water impregnated with the cultures. The water employed was in certain cases intensely colored either with methyl eosin or with uranin, which had been found by means of previous tests to have no injurious effects upon the bacteria. A plan is given to explain the relative positions of the experimental area, the filter galleries and the testing-stations. The numerous experiments are set forth in tables, each of which is followed by a statement of the conclusions to which the authors were led in consequence of the same. Thus from the first set of tests it was ascertained that the bacillus prodigiosus penetrated

*Zeitschrift für Hygiene, vol. xxxi, 1899, p. 66.

through the soil above the right-hand filter gallery in one and one-quarter hours, while it took seven hours to percolate to the left gallery. Under other conditions the test bacillus took in both cases seven hours to reach the filtering galleries. Again, when colored water tests were employed, the prodigiosus took forty-two hours to attain the gallery, while the coloring matter needed seventy-five hours to traverse the same distance through the same soil. It was further ascertained in connection with these experiments that the test bacillus remained for two months in the soil and was then still capable of further cultivation. It was also present in considerable numbers in the deeper layers of the subsoil. The bacillus prodigiosus, moreover, occurred two years later in the Turin water supply, which would seem to prove that it remained in the soil for an additional period of two years.

The authors, in conclusion, compare the results of their investigations with those of a similar kind undertaken in 1897 by Pfuhl, and claim the priority for their researches.—"Boston Medical and Surgical Journal," May 7, 1900.

LOWELL'S POISONOUS WATER.

Prof. Charles Harrington, of Harvard, has reported to the Lowell Water Board as follows:

Boston, April 7.

Frank L. Weaver, Esq., President Lowell Water Board, Lowell, Mass.

Dear Sir: I have the honor to submit the following report of my investigation of the Lowell water supply with regard to its connection with the large number of reported cases of lead poisoning among the consumers thereof.

The questions submitted to me, three in number, may be stated as follows: 1st. Does the public water supply exert an unusual corrosive action on lead pipe? 2d. Does it contain an amount of lead dangerous to health? 3rd. If so, is there any remedy short of abandonment of the supply or replacing the present leaden service pipes with tin-lined iron?

In the determination of the first and second questions a large number of analyses were made of samples collected in different parts of the city at different times and under different conditions.

Since the public supply is derived from different sources which yield water presenting certain marked differences in character, and since different parts of the city are differently supplied, it is necessary to make separate studies of the different parts of the system. Although the supply comes from three different gangs of driven wells, known as Boulevard, Cook and Hydraulic, there are really but two supplies to be considered, since the Cook and hydraulic water being pumped together may be regarded as one and the same. Some parts of the city receive only boulevard water, some only that which for convenience may be designated Cook water, and others within a certain zone which cannot be sharply defined receive one or the other, according to circumstances, the Cook water being pumped directly into the mains against the pressure of that from the reservoir which is filled from the boulevard wells.

The samples supplied were taken from the areas supplied within by one or the other, and not from within the zone wherein either or both may be obtained. (Here follow the detailed analyses).

TABLE VIII.

Summary of Average Results.

	Samples.	
Boulevard, Standing	45	0.1029
Boulevard, Running	16	0.0179
Boulevard, Ordinary use	18	0.0440
Cook, Standing	35	0.4273
Cook, Running	39	0.0747
Cook, Ordinary Use	13	0.2669

Reverting now to the questions involved in the investigation, the first to be considered is whether or not the Lowell water supply exerts an unusual corrosive action on lead pipe. Since the supply comes from two separate and distinct sources, the question must be divided into (a) Is the boulevard water unusually corrosive? and (b) Is the Cook water unusually corrosive?

The subject of the corrosive action of water on lead pipe has nowhere and by nobody been more extensively or more thoroughly studied than in Massachusetts by the State Board of Health. In the last published report of the board (for 1898) are given a large number of results of analyses of water from all parts of the State, made with particular reference to the amount of lead contained

during ordinary use and after standing in the pipes. From this report it appears that in four places in the State, namely, Lowell, Milford, Kingston and Fairhaven, a large amount of lead poisoning has been reported, and that "interviews with physicians in the towns and cities where series of samples have been taken fail to show a prevalence of lead poisoning in any except the four places mentioned above, although occasional cases have been noted in several other towns that have ground-water supplies." (Page 569.)

The following table, compiled from the published results, shows, first, the amounts of lead in the samples from the four places mentioned, and, next, in those from other places where lead poisoning is not prevalent. In the latter group are included only those supplies which exert a corrosive action equal or superior to that of the boulevard water.

TABLE IX.

(Average)	Standing.	Ordinary.
Lowell	.1933	.1899
Milford	.1991	.1258
Kingston	.1962	.0944
Fairhaven	.2461	.0959
Stoughton	.2178	.0774
Chicopee (Abbe)	.3921	.0788
Chicopee (Cooley)	.1037	.0409
Boston	.1778	.0099
North Easton	.1667	.0414
New Bedford	.1466	.0177
Ashburnham	.1210	.0307
South Hadley	.1194	.0385
Lawrence	.1094	.0276
Rockland	.1057	.0283
Malden	.1056	.0309
Palmer	.0829	.0511

In the averages for Lowell no division has been made into Cook and boulevard samples, and it must therefore be assumed, and, indeed, it is evident from the context, that the figures are derived from samples from both sources.

Comparing tables VIII and IX, it appears that the boulevard water on standing in lead pipes takes up less lead than the waters of the three other places, Milford, Kingston and Fairhaven, where

poisoning is common, and less than those of Stoughton, Chicopee, Boston, North Easton, New Bedford, Ashburnham, South Hadley, Lawrence, Rockland and Malden, in which places lead poisoning is not prevalent. It appears, furthermore, that in ordinary use it contains less than the waters of Stoughton, Chicopee (Abbe), and Palmer, and not materially more than the waters of several others, namely, Chicopee (Cooley), North Easton and South Hadley. Its average content on standing in the pipes is less than the amount in Milford water in ordinary use, and about the same as that in the waters of Kingston and Fairhaven under the same conditions.

Comparison of the two tables shows further that the Cook water is more corrosive than that of any of the places where lead poisoning is common, and that the average lead content shown by my analyses of standing Cook samples is more than twice that given for Lowell in the report of the board. Only one system included in table IX. The "Abbe" of Chicopee shows results which are not at all compared with those yielded by standing Cook water, and not one can approach the lead content of this water in ordinary use. The highest figure given is that for Lowell, 0.1899, and next in order is that for Milford, 0.1258, which is less than half as much as the average found by me for Cook water, 0.2669. While the Abbe water alone contains more lead on standing, it contains but a trifle more than a fourth as much under ordinary use.

The first question in its two parts can now be answered:

1. Is the boulevard water unusually corrosive of lead? No.
2. Is the Cook water unusually corrosive of lead? Yes.

Coming now to the second question, Does Lowell water contain an amount of lead dangerous to health? we are at once confronted by the fact that we have no absolute standard by which we can be guided; that is to say, there is no well defined line between danger and safety. An amount of lead that may work injury to one person may be quadrupled and yet be quite harmless to another. A question of this sort must be considered without ascribing undue importance to idiosyncratical cases either of susceptibility or of tolerance. It is difficult or impossible in most reported cases of poisoning to ascertain the amount which has produced injury. Samples taken under similar conditions from the same individual supply yield results which fluctuate within wide limits, and, taken under very different conditions, may show results in practical agreement or widely different, the difference being sometimes in

the direction least expected. Thus the amount of lead may be slight in a sample after standing in the pipes and large after the same water has been allowed to run for some time. In the latter instance, the result is due to the stirring up of particles of hydroxide and carbonate which have been deposited from the water upon the floor of the pipe.

The water which caused the large number of cases in the well known experience of Huddersfield, during 1879-82, showed at one place results ranging all the way from .0114 to 1.1980 parts per 100,000.

S. Steiner has made the suggestion, based upon statements of Angus Smith, Graham and Calvert, that we regard 0.070 in 100,000 as the permissible maximum, and consider any larger amount as probably dangerous. Sinclair White has stated that 0.150 in 100,000 is dangerous, and leaves it to be inferred that anything less may be looked upon as safe. By some authorities 0.050 parts per 100,000, and by others as little as 0.020, is regarded as dangerous, while others, with a recklessness born of ignorance and inexperience, stand ready either to condemn as not potable all water containing any trace whatsoever, or to deride the possibility of any being taken up. In attempting to set up a standard in such matters we must be guided by experience, and not by arbitrary rules. Fortunately, as we have seen, we have facts before us of the greatest value. We know that in certain towns large numbers of cases of lead poisoning have occurred in consequence of drinking water having a marked corrosive action on lead pipes. We know, furthermore, that in certain other towns, with water supplies that exert a less marked, but yet considerable, action on lead, no trouble is experienced. Thanks to the extensive researches of the State Board of Health, we have figures expressive of the degree of corrosion exerted by these several supplies under various conditions. Here, then, we have facts and figures which, together, may be taken as a basis for comparison and judgment.

Dividing the second question, so that a separate answer can be given for each kind of Lowell water, and comparing the figures at hand, we find that we must place the boulevard water among those which experience has shown to be safe, and the Cook water with those from which danger may well be expected. This classification appears to be supported by facts as well as by figures, for inquiry shows that of the fairly numerous cases of lead poisoning which have occurred in Lowell, nearly all are to be laid to the use

of Cook water. (Here follows an account of the experimental work performed to determine the possibility of treatment by various methods.)

RECOMMENDATIONS.

The boulevard water generally contains, on standing over night, an amount of lead which is dangerous to health. In ordinary use it contains variable amounts, according to the extent to which it is drawn and the frequency of drawing. Samples drawn after a good flushing are practically free from lead. The precautions necessary in the use of this part of the supply are no more than should be taken in any place where lead pipes are used in the house, and it is well known that house service pipes are almost universally of lead. The pipes should be thoroughly flushed the first thing in the morning before drawing any water for drinking or cooking. If one takes the trouble to draw this, however, the night before it is used, there need be no great waste of water, since in the ordinary course of drawing water for baths, washing, water-closet tanks, and so on, the pipes are very thoroughly emptied. In drawing water for drinking and cooking during the day, if no considerable amount of water has been drawn within an hour, I would advise running off about a quart for each 20 feet of pipe between the street main and the faucet, this being about the amount the pipes will contain.

Turning to Table of Cook samples, and making note of the amounts of lead found in standing and running samples from the same place on the same dates, one sees that in only about a third of the cases was the flushing effectual. Below are reproduced a number of figures showing the amounts found in the overnight samples and in the same water after allowing water to run to waste:

19 and 20	1.900	0.0850
12 and 13	0.6000	0.0519
25 and 26	0.3770	0.051
43 and 44	0.0605	0.0937
45 and 46	0.5051	0.1320
47 and 48	0.3360	0.0800
49 and 50	0.3700	0.0710
53 and 54	0.5686	0.1657

From these figures it is evident that even thorough flushing will not ensure freedom from danger in the use of the Cook water for drinking and cooking.

The Cook water contains a dangerous amount of lead even under conditions of ordinary use. Even when this water is allowed to run freely, it not uncommonly contains an amount incompatible with safety. This condition I attribute, not to any corrosive action of the running water, but to its stirring up and removing deposits of lead compounds which have already formed while the water was at rest.

Assuming that treatment of the Cook water with sodium carbonate to the extent of 15 parts per 100,000 would eventually reduce the lead content to an amount within the limit of safety, the next consideration is the matter of cost.

A million pounds of water would require 150 pounds of the carbonate, and a million gallons would require about 120 pounds. The material is exceedingly cheap, but the amount required for daily use would, at this rate, involve a considerable annual outlay, equal to the interest on several hundred thousand dollars. In addition to the annual expense involved, certain other objections to chemical treatment present themselves, namely, the popular prejudice against "doctored" water, and the possible imparting of a slight soapy taste.

Setting aside, then, the feasibility of chemical treatment, the question comes on the substitution of tin-lined iron pipe for the lead service pipes now in use or the abandonment of the supply. The changing of the pipes would be an enormously expensive operation, since tin-lined pipe of good quality is very costly, and the labor involved in making the change would be very great. It would be necessary, furthermore, in order to avoid the possibility of lead poisoning within the Cook district, not only to change the pipes from the mains, but for the owners of property to change the plumbing in great part within their houses.

All things considered, I feel that the best solution of the difficulty is the abandonment of the Cook and hydraulic wells, and will, therefore, so recommend. In order to make up for the deficiency in supply which this course would entail, I recommend the extension of the boulevard plant, if it be possible, rather than the installation of another elsewhere, and also in preference to undertaking sand filtration of the water of the Merrimack River. The boulevard supply is of excellent quality and has no more action on lead than the Merrimack water at Lawrence, where, so far as is known, no trouble on the score of lead poisoning exists. I further recommend that, though for ordinary purposes the Cook supply be abandoned, the plant be maintained for use in cases of

emergency. Should, for instance, any accident occur to the boulevard plant, the Cook supply could be brought into temporary use pending repairs, for it is not the occasional but the continuous use of the water containing lead that produces untoward results. Respectfully submitted, (Signed) CHAS. HARRINGTON.

MEDICAL EXCERPT.

By T. P. CORBALLY, A. M., M. D.

A STUDY OF PALUDISM.—On the proposition of M. LAVERAN ("Progrès Médical," 28th April), la Academie de Médecine passed, by a unanimous vote, the two following propositions: 1. To appoint a commission on paludism; 2. To express the wish that a commission be sent to Algeria to study, at some of the most unhealthy places of this colony, the place occupied by mosquitoes in spreading malarial infection, and the prophylactic measures to be employed for the prevention of the spread of the disease.

M. Blanchard spoke of the part taken in Italy and other countries by similar societies. This commission is the more important because of the great influence of paludism in preventing colonization.

MM. Blanchard, Kelsch, Laveran, Raillet and Vallin were appointed on this commission.

RESPIRATION.—"La Salud," Buenos Aires, for May, says in regard to breathing: Air is necessary for health and for beauty because these two conditions are inseparable. Our first act on coming into the world is to breathe; the cessation of breathing is death. Between this first instinctive act of breathing and the last feeble breath that ends life, how little attention is in general paid to the proper performance of this act so important for the maintenance of our lives. We admire a well-developed form, a healthy complexion, a clear skin, bright eyes, a clear intellect, active, vigorous movements, self-reliance, a well-developed mind, courage, prudence, in fact the perfection of all our physical and intellectual faculties, and yet how little attention is paid to the surest, if not the only, means of securing them.

How little attention is paid to the filling of the lungs with fresh, pure air, the blood with the natural stimulant, invigorating oxy-

gen? Many, very many, prefer the depressing influence of the foul air poisoned with carbonic acid. To restore in some degree their lost energy they resort to fumes of tobacco and the stimulus of nicotine; the intoxicating effects of alcohol under various forms, that destroys every organ and tissue of the body and makes a complete wreck of the system, both moral and physical.

TREATMENT OF ACIDITY OF THE URINE WITH PHOSPHORIC ACID.—M. Cautru has made a report to the Société de Therapeutique ("Le Progrès Médical," 19th May) on the results he has obtained by a careful study during the past two years among all his patients, of the acidity in the urine, taken while the patient is fasting, and treated according to the latest method of M. Joulie, as described in the "Bulletin generale de therapeutique" for March and April, 1900. After a very careful study by this method he has been able to account for the greater part of the diseases called arthritic, and is convinced that they are caused, not as has been generally believed, by hyperacidity, but, on the contrary, are more or less hypo-acid. He has also remarked that a number of other pathological conditions, as neurasthenia, hyperchlorhydric dyspepsia, the premonitory symptoms and the convalescence of many infectious diseases, tuberculosis, diabetes, cancer and others, are more frequently accompanied with hypo-acidity of the urine.

The greater part of the cases of hyperacidity of the urine are due to acid in fermentation in the stomach, which ceases after a few days' treatment.

The best treatment for hypo-acidity consists in the administration of phosphoric acid in variable doses, which may be increased without inconvenience to 5 grams of the officinal phosphoric acid.

M. Dalché stated that a patient suffering with gastritis caused by hypo-acidity of the system was greatly improved by the use of phosphoric acid.

M. Albert Robin thinks that the beneficial effects obtained from the acid treatment in cases of hyperchlorhydric dyspepsia are due to an action of inhibition produced on the glands. The same treatment may be useful in cases of anachlorhydria by favoring the secretion of pepsin.

FEEDING BY RECTAL INJECTIONS.—M. Frenkel, in the "Archives Médicales de Toulouse," Mai, 1900, finds that feeding by the rectum sometimes becomes a matter of grave necessity, and it is probable that this mode of feeding will in the future occupy a

much wider field than at present. It is well known that the rectum absorbs hydro-carbons very readily; less perfectly the albuminoids, and very poorly the fats. The author has studied with special care the use of the albuminoids as nutritive injections.

The white of the egg may be used raw; soluble albumins, as syntonin, albuminates under the form of albumose or of peptones. Casein cannot be used but in a very limited quantity in some preparations, as nutrose, for instance.

That the albumins be freely absorbed in the large intestines is necessary, according to Voit, Bauer, Eickhorst and others, to add to it a certain quantity of chloride of sodium. Ewald has very fully determined that raw eggs, when emulsified, are fully absorbed in the rectum without sea salt; but Huber has shown that the addition of the salt greatly favors the rapid absorption of the eggs. Loubet has for nearly thirty years studied the injections of the whites of eggs. These injections are absorbed slowly, but fully; however, it is necessary to take special care to give small injections, and previously to use some fluid to clean the rectum, and thus prevent bacteria from putrifying the albumin, for such an infection has caused inflammation of the mucous membrane of the rectum. The peptones are still more readily infected. If after three hours the food injected is still found in the intestine, no trace whatever will be detected after six hours. These peptones are well assimilated, for it has been satisfactorily proved that, when given through the rectum, no trace has been found in the urine. These peptones must be used with care, for if the proportion of 80 grams to 250 of water be exceeded, they become putrid and irritate the intestine.

The peptones are sometimes less available than the white of egg, for, that they may be readily absorbed by the colon, its mucous membrane must be in a perfectly healthy condition. As for the derivatives of casein, Salkowski and Rohman have obtained but very unsatisfactory results. Brandeburg has shown that 40 per cent. of their nitrogen is absorbed by the intestine.

Treatment of Pneumonia with Brewer's Yeast.—M. P. Marie, in a report to the Société Medicale des Hopitaux ("Le Progrès Médical," 26th May), gives a detailed account of the treatment and cure of pneumonia by the injection of brewer's yeast into the bowels. Although having treated many cases in this way, he is not yet prepared to advocate the exclusive use of yeast as a specific, for he is aware that many cases of acute pneu-

monia recover spontaneously; but he is fully persuaded that the yeast has had a very favorable influence on the course of the disease.

CINNAMON, writes Dr. Raymond Crawford (London letter "Therapeutic Gazette," April, 1900), has of late been raised to the rank of an important drug. In student days aqua cinnamomi was an innocuous vehicle with a mild stimulant action on gastric secretion, and that was the sum of it. Its virtues, however, have been long known in tropical countries as a powerful germicidal agent; on this basis it has recently been exploited as the very newest specific for influenza. Now we are told from Formosa that in dysentery and the whole gamut of tropical diarrhœas cinnamon is without a peer, and effective in cases where the strongest astringents and sedatives have been tried and found wanting. We are in much the same dilemma with cinnamon as with ipecacuanha, for how comes it that agents that promote secretion in small doses, in large doses exert a strong controlling influence over intestinal flux? It must be that some other property comes into action, and that property would seem to be germicidal. Dr. Wilkinson, of Formosa, prescribes teaspoonful doses of the powdered cinnamon, mixed with a little milk to mold it into the shape of a bolus, and this is chewed night and morning. At the summer meeting of the British Medical Association at Portsmouth, Dr. Henderson recommended cinnamon in cases of sprue. Our troops in South Africa have suffered seriously from dysentery, and a writer in a daily paper suggests that a supply of cinnamon sticks should be sent out for their use.

A PRIZE FOR INVESTIGATIONS ON CANCER.—According to "Science" for April 6, the Council of the Royal College of Surgeons of England has appointed a committee to adjudicate on the Walker Prize. This prize, which is open to investigators of all nationalities, is given for the best work in advancing the knowledge and therapeutics of cancer during the past five years ending December 31, 1900, and amounts to the sum of £100.

Recent figures given by the registrar-general's report for England and Wales during thirty-one years show that there has been an increase of deaths from cancer from 38.5 in 100,000 living population in 1864 to 75.5 in 100,000 living in 1895—in other words, the ratio of the mortality from cancer has almost exactly doubled in England and Wales during the thirty-one years preceding 1895.

EDITOR'S TABLE.

SANITARIAN, JULY, 1900.

☞All correspondence and exchanges, and all publications for review, should be addressed to the Editor, Dr. A. N. Bell, 337 Clinton Street, Brooklyn, N. Y.

ABOUT THE INTRODUCTION OF PUBLIC BATHS.

Exception has been taken by the "Medical Record" to Judge Brown's article, on other pages of this number, because of its apparent assumption of originality of method as well as State legislation for the introduction of the public spray-bath system in New York City. The "Medical Record's" contention is based on Dr. Baruch's publications and work, first publicly explained to the Academy of Medicine in 1890, and on several subsequent occasions, ignored in Judge Brown's article. The "Medical Record" might have referred to the very different spirit of Dr. Baruch in this regard. To an editorial paragraph in THE SANITARIAN for June, 1895, appended to the publication of an amendment of the act of 1892, stating that "for this salutary act of the Legislature credit is chiefly due to Dr. Simon Baruch, of New York, who has for several years urged it, and, meanwhile, been instrumental in introducing the greatly improved system of rain baths in various charitable institutions in the city," Dr. Baruch promptly replied in the next number (July, 1895): "Every humane reader of the leading editorial in your issue for June must rejoice with you on the results of recent legislation in recognition of the value of personal cleanliness as a great hygienic agent. * * * The credit which you so generously give me for having initiated this movement for free baths four years ago is highly appreciated, for I value the good-will and approbation of my *confreres* of the medical profession far more highly than any recognition by the public. I cannot, however, in justice to those who have aided me most efficiently, accept the approbation without mentioning the fact that your aid and countenance in my earlier efforts in this public bath agitation has contributed much to its success. Let me recall to your mind," etc. * * *

"The Hon. Goodwin Brown, of Albany, a member of the State Lunacy Commission, was the active and energetic manipulator of the act which makes the erection of perennial free public baths

mandatory upon our largest cities. The Hon. G. W. Hamilton, as chairman of the Committee of the House, not only labored valiantly in his own committee and in the Assembly, but also before the Senate committee, for the passage of the act. Dr. Joseph Bryant, Health Commissioner at that time, aided and encouraged me, and was instrumental, with Dr. Edson, his successor, in securing the co-operation of President Wilson, of the Board of Health. The latter has recently obtained a report from Dr. Roberts, Sanitary Superintendent, who is familiar with our tenement districts, upon the location for these baths. By courtesies of President Wilson and Dr. Edson, I enjoyed the privilege of attending a meeting of the Board of Health, at which Dr. Roberts' selections were approved," etc. In short, Dr. Baruch was so gratified with the success of the enterprise that, like Schley, on the result of the conflict with the Spanish fleet, he thought there was honor enough in it for all the participants.

And there were others. Not least effective by any means was Mayor Strong's Committee on Free Public Baths and Public Comfort Stations, who labored assiduously and essentially contributed to the success of the work, as abundantly shown in THE SANITARIAN contemporaneously with the effort and soon after it had been crowned with success, not only by Dr. Baruch, but by Dr. Moreau Morris and his co-workers of the Mayor's committee, and several other contributors.

Nevertheless, we take pleasure in republishing Judge Brown's article as a meritorious contribution to the subject generally, wholly apart from his authorship of the law. Moreover, to him is unquestionably due the credit of introducing the system of spray bathing in our State institutions for the insane.

SOME COFFEE INCIDENTS IN RELATION TO PLAGUE.

THE SANITARIAN has before taken occasion to remark that there is no record of the plague infection, or the infective germ of any other disease, ever having been propagated by sound coffee.

Coffee is antiseptic and opposed to infective germs to such a degree as to be dangerous to them, and actually disinfective of infected things if long kept in contact with it, insomuch that coffee bags are of all textural material the least liable to become infected, even when stored in foul vessels from infected ports.

Nevertheless, according to recent newspaper reports, action was recently taken in Chicago against the possible use of coffee landed

in New York and subsequently roasted, brought from the plague infected port of Santos eight months ago!

Of like inconsistency with sanitary knowledge, the Louisiana State Board of Health recently passed resolutions declaring that the coffee ship "Corsica," with a cargo from Rio Janeiro, should not be allowed pratique at New Orleans until after thirty days, and then only in case no symptoms of bubonic plague should develop. Moreover, the Board recognized danger from the coffee steamer "Coleridge," via New York, that left Rio two days after the "Corsica," and upon arrival at New York, being found "clean" by the quarantine officials, she was, of course, at once admitted to pratique. And for this the Louisiana State Board passed an additional resolution, declaring that the action of the sanitary authorities of New York was "extremely reprehensible."

Apropos to such action, the New York "Journal of Commerce and Commercial Bulletin," June 9th, says:

"One of the curious features of the bubonic plague scare is that there has been no alarm over vessels arriving here from Bombay or other Indian ports. Jute and other Indian products more likely than coffee to carry the contagion have been freely imported here, our Board of Health has manifested no solicitude, and there has been no alarm in importing or shipping circles. We published a letter some weeks ago from a gentleman who commented on the fact that the plague seemed to cease at Santos as soon as there was an upward movement of the price of coffee, and who evidently regarded the disease as an old one under a new name. A letter published in this paper on Friday shows that the owners of the 'J. W. Taylor' have reached the same conviction as to the nature of the disease, and there is a widespread suspicion that the reports of bubonic plague at Santos have had some connection with the price of coffee."

TREATMENT OF DISEASE WITH LIGHT.

Apropos to Dr. Bleyer's article in our June number, "Consular Reports, No. 233," contains a letter from Minister Swenson from Copenhagen, December 2, 1899, to a physician in Minnesota, in reply to certain inquiries on the subject, as follows:

"Dr. Finsen's Light Institute was founded in 1896, for the purpose, as expressed in the articles of incorporation, of making and encouraging investigations regarding the effects of light on the living organisms, especially with the view of utilizing light rays in the field of practical medicine.

"The corporation numbers among its members men of eminence and recognized authority in the medical profession, such as the professors of the University of Copenhagen in pathological anatomy, anatomy, and common pathology; and the superintendents of the leading hospitals in Copenhagen.

"The institute has gained the confidence and aroused the interest of the public to such an extent that it now receives state as well as municipal aid in the way of appropriations. Its success and growth have been phenomenal. Altogether, some three hundred and fifty cases of lupus vulgaris have been treated, in all of which satisfactory results have been obtained. A large number of cases have been treated experimentally for other diseases of the skin, among them erysipelas and alopecia areata. Scarlet fever is to be experimented with. In an interview which I had with Dr. Finsen a few days ago, he told me that the light treatment as now perfected is so effective that there is reason to believe that every case of lupus vulgaris can be cured by means of it. Dr. Finsen's successful treatment of smallpox by means of red light is also very interesting and ought to be widely known.

"Both sunlight and electric light can be used for medical purposes. Owing to its latitude, Denmark is not favorably situated for using sunlight; hence the institute makes nearly exclusive use of electric light. The arc lights used are each of 4,000 candle-power (ordinary street arc lights are of from 2,000 to 4,000 candle-power). Earlier experiments with this method of treatment have failed because the light used has not been powerful enough.

"Dr. Finsen is also experimenting with photo-chemical baths to ascertain how far light is instrumental in supplying the skin with blood. He says that the red color of the exposed parts of the skin is caused principally by light. Heat seems to hinder, and cold to further it."

SANITARY INSPECTOR OF RAILROAD COMPANIES—A GOOD MOVE.

The Union Pacific Railroad Company has created the office of Sanitary Inspector in its service. The duties of the position require regular visits to the boarding outfits connecting with the grading camps, gravel pits, and bridge gangs, and other boarding establishments, to inspect their sanitary condition. It is hoped to thus check spreading of disease, which at times has been troublesome in the camps. Contracts will be annulled with such contractors as do not follow instructions of the Sanitary Inspector.

CONSUMPTION OF BEER.

The "National Advocate" sums up the consumption of beer per head in England at 31.9 gallons a year; Germany, 27.1 gallons. The average American takes 15 gallons per year, and the Frenchman 5.5 gallons.

France consumes annually per head 2.07 gallons of spirits, Great Britain 1.03 gallons, and Germany 1.85 gallons, while America uses 1.15 gallons.

Of the beer consumed in the United Kingdom, 99.9 per cent. is home-made, in France 98.8, in Germany 99.2, in the United States 99.8.

The United States manufactures 98.8 per cent. of its spirits, England 80, France and Germany 92.5 and 97.9 respectively.

In Australia the consumption of wine is 1.05 gallons per head, and of beer 10.6. Canada's figures are even less.

The above figures are from English sources. The latest returns in this country show that the United States derived a revenue of over $167,000,000 from internal taxes on liquors, besides $7,000,000 customs duties on imported liquors. Alcohol plays a tremendous part in the revenue, as it does in the demoralization of nations.

NEW YORK'S UNSANITARY PRISONS.

A report on the conditions of our State prisons has just been made by a committee consisting of Drs. Austin Flint, J. G. Phelps Stokes, J. Murray Mitchell, J. Seeley Ward, Jr., Eugene Smith, F. P. Bellamy, Henry E. Gregory and William M. F. Round. Referring to the cells at Sing Sing, the report says that the size of the ordinary cell is 3 feet 3 inches by 6 feet 6 inches in height, and 7 feet long, and that there are 1,200 of these in a room 60 by 400 feet. In addition to this insufficient breathing-space, the lighting by day is poor, and the prison is overrun with vermin. Auburn Prison is not quite so bad, but it is poorly lighted and ventilated, is dangerous in case of fire, and has insufficient sanitary arrangements. Dannemora Prison is described as being much cleaner and better in every way, though not what it should be. The discipline was noted to be decidedly lax in Sing Sing, a little better at Dannemora, and excellent at Auburn. This committee, which was appointed under the authority of the Supreme Court, declares these prisons to be a disgrace to a civilized community.

LIQUOR PROSECUTIONS.

There has been a great deal in the Indianapolis papers for weeks about the prosecution of the druggists ("Bulletin of Pharmacy") for violation of the liquor laws. Upon the evidence of spotters, about twenty-five druggists were indicted and brought to trial by the grand jury for selling liquor without a license. Nearly all of them pleaded guilty and were fined $5 each. One, a woman, pleaded not guilty, and was convicted and fined $40 and costs. Others protested that they had not violated the spirit of the law inasmuch as they had sold no liquor by the drink, and had sold it by the bottle only when sure it was needed for medicinal purposes. When so used it is medicine, they asserted, and on this ground they made preparations to bring a test case before the higher courts. From what we gather from the newspapers, these Indianapolis cases seem to present a condition similar to that of the seventy-two Hyde Park druggists mentioned in the March "Bulletin": the few druggists who turn their stores into cloaked saloons have apparently brought all their fellow druggists into suspicion and disrepute! The store of one such druggist in Hartford, Conn., was recently raided, and two men were found drinking in the back room. Four druggists of Blairsville, Pa., were recently sentenced to pay a fine of $200 each and to undergo imprisonment for twenty days for violation of the liquor laws of the State. Three druggists of Beaver, Pa., have each been fined $50 for violation of the liquor laws, and a prominent St. Louis druggist has been fined $100 and costs for the same offense.

MEASUREMENTS OF BOSTON SCHOOL CHILDREN.

The following extracts from the records of the School Committee meeting, April 24, 1900, will be of interest to those interested in physical education: "Mr. Calderwood, for the Committee on Hygiene and Physical Training, to whom was referred, February 27th, a communication from the Boston Society for the Advancement of Physical Education, requesting permission to make a series of measurements of the height and weight of the Boston school children, beginning with the primary grades and continuing through the period of growth, reported that they have granted a hearing to representatives of the Society, and have very carefully considered the matter. Your committee fully agree with the statement that observations of this sort on the same individual at successive periods would be of great practical value from an educational as well as a physiological standpoint, and

welcome the advice and co-operation of the Boston Society for the Advancement of Physical Education, which they are assured will be willingly rendered, with respect to the manner in which the plan should be carried into effect, and in the arrangement and study of the facts to be collated, but feel that the actual measurements should be made under their own supervision by the Director of Physical Training, who is directly responsible to this board. Furthermore, as the value of observations of the nature under consideration will depend upon their continuance during a series of years, in a systematic and definite manner, your committee recommend the adoption of an amendment to the rules, the passage of which will be sufficient to ensure the successful carrying out of suggestions made by the memorialists."

TROPICAL HYGIENIC INSTITUTE AT HAMBURG.

Consul-General Guenther, of Frankfort, on January 29, 1900, reports:

"The negotiations between the city of Hamburg and the Imperial German Foreign Office for the establishment of a tropical hygienic institute at Hamburg have been completed. According to agreement, an institute for ship and tropical diseases is to be opened on October 1. Its purpose is to investigate these diseases, to serve as a preparatory school for physicians to go to German colonies in tropical climates, and for the study of hygienic questions. The head physician and his scientific assistants will be selected at Hamburg with the consent of the colonial department of the Foreign Office. The General Government will contribute to its support, while the city of Hamburg will have to furnish at all times as many beds as the colonial department may require. Dangerously contagious diseases, as pest, cholera, and smallpox, will not be treated in the institute. The senate of Hamburg has submitted the project to the city for approval, and has also recommended an appropriation of about $31,500 for remodeling the hospital for sailors."

"FAMINE, PLAGUE AND EMPIRE."

In pointing to the famine in India as an argument against expansion (Superior, Wis., "Leader"), those who write under the head of "Famine, Plague and Empire" have struck about the most illogical idea since the introduction of the scare about imperialism. Because there is famine in India is no reason why there should be famine in the Philippines. If the British Government fails to cope with the situation in India it does not follow that the

United States would be unable to meet a similar emergency in any of its possessions.

There is no logic in the proposition that civilization produces disaster. The present suffering from famine in India is nothing like as great, with the aid which England is giving to the starving natives, as it would be without that help. The United States Government relieved the hunger and poverty of the Cubans, and is performing the same office in Porto Rico. If it shall ever come to pass that there is destitution in the Philippines, succor will be promptly extended by the government.

The improvement in the sanitary conditions of Havana and Manila, and many other island cities, through the efforts of the Americans, does not warrant the fear that plague and pestilence are increased by the spread of civilization, and famine is certainly not an American specialty.

The above argument from the Kansas City "Star" seems wholly untenable. We believe in the administration's policy of expansion. To sustain this position, incorrect arguments are not necessary. It is true, as the "Star" says, that because there is famine in India, is no reason why there should be famine in the Philippines. Neither is it a reason for concluding there will be. Some think that there is logic in the proposition that civilization brings disaster. Or, rather, that civilization, by caring for, protecting and saving life, tends to a more rapid increase in the population of a country. Thus the limit of population which the country can sustain is the sooner and more surely reached. Malthus contended this would be the final result in all countries. It is true "the United States did relieve" in large measure "the hunger and poverty of the Cubans." So, too, "if it shall ever come to pass that there is destitution in the Philippines, succor will be promptly extended by the home government." But to relieve the wants of one or two million Cubans or succor the seven million population of the Philippines is a far different proposition from that of caring for the hundreds of millions of India. The latest estimate is that an hundred million is already affected by the present famine.

It is true that the fact of a famine existing in India is no argument against the policy which secured our island possessions; still there is no evidence that we could make a better showing in India than England has done. Because we can care for ten million people is no conclusive test that we could care for an hundred million.

A CONSUMPTIVE'S EXPERIENCE.

The Chicago "Chronicle" published the following incident as related in Colorado by one of the parties interested: Late one afternoon a man, apparently in the last stage of consumption, walked up to the shack of a sheep herder and requested permission to remain there a few days. "I shall not bother you longer than two or three days. My lungs are about gone, and I want to die among the mountains; besides, I am out of money and have no way to get a cent. May I stay?" The herdsman assured him that he might. The consumptive ate a hearty supper at the camp fire and then threw himself upon a blanket under a tree for a good night's sleep, and perhaps the last one.

An hour or so before daylight a terrific rainstorm came up. The herdsman told his visitor to make himself as comfortable as he could in the shack, which was little if any better than being out of doors, while he went out to look after his sheep. The consumptive insisted upon going too, and with great difficulty he mounted a Mexican pony. It was found that the sheep were badly scattered, and it took until dark to "round" them up. Their noon meal was confined to barbecued mutton. The next morning the consumptive thought he felt better.

"At least," said he, "yesterday's trip was a new experience to me, and it was so enjoyable that I feel less like dying than I did. In fact, I should like to live long enough to have just such another frolic." And he did live to have several frolics, and not only so, but a year afterward he said, laughingly: "I have the physical strength, and if I had the science of the ring, I would go and thrash Corbett, just to show what roughing will do for a consumptive who had given up all hope."

It is the experience of this man and hundreds of others that has educated the medical profession to a confirmed and reconfirmed knowledge that "roughing it" on the "bosom of nature" is the natural, and therefore the one efficacious cure for lung diseases. At least consumptive specialists everywhere, in Europe as well as in America, are turning to the air, the sunshine and the exercise of life in the wilderness for the only remedy that seems to be mightier than those things which conspire against the health and life of man as it is in his lungs.

ATHLETICS BARRED.—The College of Physicians and Surgeons of Chicago, after an animated debate, has decided henceforth to

refuse recognition to athletics and no longer gives official sanction and support to the college football team which has taken so prominent a part in intercollegiate athletic competitions. This step has been taken because experience has taught the faculty that college athletics have a demoralizing and disturbing influence on the students and interfere with the educational work of the college.

DR. SAMUEL G. GANT, recently elected Professor of Rectal and Anal Surgery in the Post-Graduate Medical School and Hospital, has removed from Kansas City, Mo., to No. 58 West 56th Street, New York City.

FATHER DAMIEN'S COMPANION.—The Rev. Father L. L. Conrady, M. D., is in Philadelphia. He has spent eleven years among the Hawaiian lepers, and was with Father Damien when he died. He has lately received the degree of M. D., and will work among the lepers in China.

DR. E. O. SHAKESPEARE, an eminent sanitarian, died suddenly of heart disease in Philadelphia June 1st. He was born in 1846, and graduated from the medical department of the University of Pennsylvania in 1869. He practiced at Dover, Del., until 1875, since which time he has resided in Philadelphia. He served on the staff of the Philadelphia Hospital, and was at various times president of local and national societies. In 1885 he was appointed by President Cleveland to report on cholera in Europe and India, his report being a most valuable one. He also made various other investigations regarding contagious diseases, studying with Koch in 1886, and of typhoid fever in the Spanish-American war. By Dr. Shakespeare's death Philadelphia loses one of its most tireless and brilliant physicians.

MORTALITY AND MORBILITY REPORTS AND REVIEWS.

STATE OF NEW YORK: The sanitary districts into which the State is divided are as follows: *Maritime District,* includes New York, Brooklyn, Long Island, Staten Island and Westchester County; *Hudson Valley District,* all the counties on either side of the Hudson River, except Westchester, to and including Albany and Rensselaer; *Adirondack and Northern District,* the northern section of the State, the counties of Washington, Warren, Hamilton, Essex, Clinton, Franklin, St. Lawrence, Jefferson and Lewis; *Mohawk Valley District,* Schenectady, Schoharie, Saratoga, Mont-

gomery, Fulton, Herkimer and Oneida Counties; *Southern Tier District,* the seven counties along the southern border of the State; *East Central District,* Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga and Cortland Counties; *West Central District,* Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee and Wyoming Counties; *Lake Ontario and Western District,* Oswego, Wayne, Monroe, Orleans, Niagara and Erie Counties.

The State Board of Health Bulletin for April, 1900, reports the number of deaths for the month to be 12,486—547 less than the preceding month, the death rate having increased from 20.4 to 20.5.

Maritime District, 3,935,000: Total deaths, 7,319; death rate, 22.5; deaths under five years, 2,502; from zymotic diseases per 1,000 from all causes, 100. From cerebro-spinal meningitis, 33; typhoid fever, 27; malarial diseases, 21; smallpox, 1; scarlet fever, 71; measles, 129; erysipelas, 73; whooping-cough, 82; croup and diphtheria, 224; diarrhœal diseases, 72; acute respiratory diseases, 1,906; consumption, 835; cancer, 208.

City of New York, 3,654,594: Total deaths, 6,802; death rate, 22.6; deaths under five years, 2,388; from cerebro-spinal meningitis, 21; typhoid fever, 24; malarial diseases, 19; smallpox, 1; scarlet fever, 70; measles, 123; erysipelas, 72; whooping-cough, 79; croup and diphtheria, 220; diarrhœal diseases, 64; acute lung diseases, 1,767; consumption, 802; cancer, 194.

Borough of Manhattan, 2,007,241: Total deaths, 3,821; death rate, 23.2; deaths under five years, 1,382; from cerebro-spinal meningitis, 21; typhoid fever, 9; malarial diseases, 5; scarlet fever, 40; measles, 53; erysipelas, 68; whooping-cough, 33; croup and diphtheria, 125; diarrhœal diseases, 38; acute lung diseases, 1,001; consumption, 435; cancer, 127.

Borough of the Bronx, 174,370: Total deaths, 302; death rate, 27.3; deaths under five years, 108; from typhoid fever, 1; malarial diseases, 2; smallpox, 1; scarlet fever, 7; measles, 11; erysipelas, 5; whooping-cough, 5; croup and diphtheria, 12; acute lung diseases, 82; consumption, 91; cancer, 5.

Borough of Brooklyn, 1,267,258: Total deaths, 2,229; death rate, 21.4; deaths under five years, 796; from cerebro-spinal meningitis, 12; typhoid fever, 14; malarial diseases, 8; scarlet fever, 21; measles, 53; erysipelas, 16; whooping-cough, 39; croup and diphtheria, 73; diarrhœal diseases, 21; acute lung diseases, 581; consumption, 238; cancer, 48.

Borough of Queens, 136,559: Total deaths, 220; death rate, 19.5; deaths under five years, 66; malarial diseases, 4; scarlet fever, 2; measles, 1; erysipelas, 3; whooping-cough, 1; croup and diphtheria, 4; acute lung diseases, 63; consumption, 19; cancer, 3.

Borough of Richmond, 69,266: Total deaths, 140; death rate, 24.6; deaths under five years, 36; measles, 5; croup and diphtheria, 6; acute lung diseases, 40; consumption, 19; cancer, 11.

Section 225 of the Sanitary Code, adopted January 19th, 1897, classes pulmonary tuberculosis as "an infectious and communicable disease." Under the provisions of this section physicians are required to report to the Department of Health the name, address, age, sex and occupation of every case of pulmonary tuberculosis coming under their professional care. The information thus received is solely for registration, and cases so reported are not visited by the inspectors of this department, nor are they interfered with in any way, except upon the request of the attending physician.

The residences of all cases of tuberculosis reported to this department by public institutions are visited by Medical Inspectors, who there give information with regard to the nature of the disease and the precautions necessary to prevent the infection of others. When residences occupied by consumptives are vacated through the death or removal of the patient, the inspectors recommend the renovation required to free them from infection. The orders for such renovation are enforced by the Board of Health.

Hudson Valley District, 700,000: Total deaths, 1,163; death rate, 20.0; deaths under five years, 262; from cerebro-spinal meningitis, 7; typhoid fever, 33; scarlet fever, 3; measles, 24; erysipelas, 4; whooping-cough, 10; croup and diphtheria, 11; diarrhœal diseases, 8; acute lung diseases, 330; consumption, 137; cancer, 40.

Albany, 100,000: Total deaths, 202; death rate, 22.4; deaths under five years, 43; cerebro-spinal meningitis, 2; typhoid fever, 6; diphtheria, 1; acute lung diseases, 58; consumption, 26; cancer, 6.

Adirondack and Northern District, 390,000: Total deaths, 526; death rate, 16.2; deaths under five years, 77; cerebro-spinal meningitis, 3; typhoid fever, 10; scarlet fever, 3; erysipelas, 6; croup and diphtheria, 7; acute lung diseases, 94; consumption, 53; cancer, 14.

Mohawk Valley District, 395,000: Total deaths, 595; death

rate, 18.2; deaths under five years, 95; from cerebro-spinal meningitis, 2; typhoid fever, 7; croup and diphtheria, 6; acute lung diseases, 137; consumption, 59; cancer, 27.

Utica, 55,000: Total deaths, 108; death rate, 23.5; deaths under five years, 22; from croup and diphtheria, 2; acute lung diseases, 21; consumption, 11; cancer, 5.

Southern Tier District, 425,000: Total deaths, 607; death rate, 16.8; deaths under five years, 85; from cerebro-spinal meningitis, 6; typhoid fever, 3; scarlet fever, 2; croup and diphtheria, 16; diarrhœal diseases, 7; acute lung diseases, 94; consumption, 36; cancer, 23.

Binghamton, 45,000: Total deaths, 85; death rate, 28.7; deaths under five years, 21; from scarlet fever, 2; croup and diphtheria, 10; acute lung diseases, 16; consumption, 4; cancer, 2.

Elmira, 40,000: Total deaths, 54; death rate, 15.6; deaths under five years, 7; from cerebro-spinal meningitis, 1; acute lung diseases, 10; consumption, 4; cancer, 1.

East Central District, 415,000: Total deaths, 587; death rate, 16.7; deaths under five years, 87; from cerebro-spinal meningitis, 4; typhoid fever, 5; scarlet fever, 3; measles, 4; erysipelas, 5; whooping-cough, 3; croup and diphtheria, 4; acute lung diseases, 107; consumption, 52; cancer, 25.

Syracuse, 120,000: Total deaths, 162; death rate, 18.0; deaths under five years, 34; from cerebro-spinal meningitis, 3; typhoid fever, 1; scarlet fever, 1; croup and diphtheria, 2; acute lung diseases, 23; consumption, 17; cancer, 8.

West Central District, 325,000: Total deaths, 398; death rate, 15.0; deaths under five years, 43; from cerebro-spinal meningitis, 1; typhoid fever, 1; scarlet fever, 3; measles, 3; whooping-cough, 5; croup and diphtheria, 4; acute lung diseases, 60; consumption, 29; cancer, 15.

Auburn, 35,000: Total deaths, 46; death rate, 17.8; deaths under five years, 12; from whooping-cough, 4; acute lung diseases, 10; consumption, 3.

Lake Ontario and Western District, 890,000: Total deaths, 1,191; death rate, 14.4; deaths under five years, 224; from cerebro-spinal meningitis, 5; typhoid fever, 10; scarlet fever, 6; measles, 15; erysipelas, 3; whooping-cough, 6; croup and diphtheria, 5; diarrhœal diseases, 15; acute lung diseases, 234; consumption, 101; cancer, 58.

Buffalo, 370,000: Total deaths, 446; death rate, 14.4; deaths under five years, 108; from cerebro-spinal meningitis, 3; typhoid fever, 3; scarlet fever, 4; measles, 7; croup and diphtheria, 3; diarrhœal diseases, 7; acute lung diseases, 94; consumption, 36; cancer, 20.

Rochester, 180,000: Total deaths, 278; death rate, 18.8; deaths under five years, 45; from typhoid fever, 2; scarlet fever, 1; diphtheria, 1; acute lung diseases, 52; consumption, 23; cancer, 18.

Total for the whole State, 7,400,000: Total deaths, 12,486; death rate, 20.5; deaths under five years, 3,376; from cerebro-spinal meningitis, 61; typhoid fever, 96; malarial fevers, 23; smallpox, 1; scarlet fever, 92; measles, 191; erysipelas, 94; whooping-cough, 117; croup and diphtheria, 277; diarrhœal diseases, 117; acute lung diseases, 2,962; consumption, 1,302; puerperal diseases, 125; diseases of the digestive system (not diarrhœal), 852; diseases of the urinary system, 860; diseases of the circulatory system, 1,080; diseases of the nervous system, 1,270; cancer, 410; accident and violence, 469; old age, 578; unclassified, 1,509.

The State Board of Health has issued a special bulletin stating that as pulmonary tuberculosis is now so generally recognized by the medical profession as an infectious disease, the Board has decided to include it in the list of infectious and contagious diseases, to be reported monthly by the health officers of the different municipalities of the State.

CALIFORNIA.—San Francisco, 360,000. Report for April: Deaths, 591—85 under 5 years; annual death rate, 19.69; deaths from specific febrile diseases, 39; pulmonary tuberculosis, 81; cancer, 41; bubonic plague, 1.

Reports of plague, summed up to May 16: as reported in our June number, there had been six deaths from it, all in "Chinatown."

Dr. Geo. F. Shrady, the special messenger of the New York "Herald" and the San Francisco "Call," reported from San Francisco, May 31 ("Herald," June 1):

"No living case of plague has been seen in San Francisco. From my point of view, being a mere visitor here, this condition of things is somewhat difficult to explain. In this state of mind the people of San Francisco very generally share. They say, If the plague is here why is not a real live sample of it shown to us?

"One plausible reason for this condition of affairs is offered in the peculiar habits of secrecy of the Chinese regarding sickness

and death among their numbers. There is a suspicion with some people with whom I have conversed that cases which might have occurred in the interim between May 15 and yesterday have been concealed and that there may be a regular train of connecting cases which have not been regularly reported.

"I hardly think there is any foundation for this conjecture in view of the reasonably thorough house to house inspection which has been enforced by the Health Board. * * *

"The inhabitants of Chinatown are afraid of the white doctor, and especially are they in fear of the members of the Health Board. The Chinese physician is uneducated, irresponsible and has no license to practice, but in a vast majority of cases this individual is almost universally employed by his people. These native medicine men are not obliged by any special ordinance to report suspicious cases to the health authorities, and are certainly not willing to do so of their own accord for obvious reasons. This partially explains the fact that the first notice to the authorities of a suspicious case is ordinarily emphasized by asking permission to bury the body. Then the Health Board takes the matter in charge.

"It was in this way that Dr. Wilson, the Assistant City Physician, discovered the cases already reported. Now it appears to be the intention of the Health Board to make an autopsy on every body discovered. This does not entail any extraordinary labor, for I am informed that the mortality in Chinatown is very low; in fact, Dr. Wilson informed me the other day that there was only an average of about two deaths a day. This, considering the population, is a very low rate of mortality.

"In accordance with the intention named, there was an autopsy made on a child this morning by Dr. Kellogg. Dr. Kinyoun, Dr. Whithouse, Dr. Wilson, myself, and several other medical men were present. The child apparently died without any definite diagnosis having been made before death. The illness was of a few days' duration, the little patient having been under the care of a Chinese female physician until seen by an American physician, who was in the employ of the Six Companies, just before death. This autopsy was made in the morgue in the Chinese district. * * *

"Now, as to the autopsy proper, it is well to say in a general way that nothing specially significant of plague was discovered in the gross appearances of the organs removed.

"Chinatown is quarantined, and that quarantine is, for all practical purposes, perfect. The house to house inspection is being conducted by a large corps of sanitary inspectors, the sewers are being flushed, houses fumigated, and altogether the whole matter is as well in hand from a sanitary point of view as could reasonably be desired.

"Every member of the Health Board is sufficiently alive to the necessity of cleaning up Chinatown. There has not been made the first objection to such a move on the part of any one of the citizens, even of those who are loath to believe that there is any necessity for so doing, merely on account of the so-called plague situation. The universal verdict is that Chinatown must be cleaned up, plague or no plague.

"It seems to me that the recent developments connected with the plague scare have almost been warranted in view of the fact that the district is liable to breed disease at any time. I think I have in some descriptions of tours in this district made it so plain that Chinatown is so notoriously filthy that almost any superlative could fit such a condition.

"In different sections it has different degrees of comparison in the down grade of appalling disgustfulness. The more you see of it the more you are impressed with the fact. The 'heathen Chinee' plays his game with dirt, and he has not only a full hand, but carries his traditional extra card in his sleeve. He washes for the Christians because he is willing to minister to their foolish whims. In this way he fosters his own personal indifference to cleanliness in his own hovel.

"The worst of all is that he believes he has an unquestioned prerogative in this direction, and stupidly and passively resists all missionary efforts to the contrary. His person may appear clean enough, but one would not wish to run the risk of taking pot luck with him in his own quarters.

"Considering all things, it is a great wonder that the plague, or any other infectious disease, has not swept Chinatown long ago with a tidal wave of the most awful mortality. All things being equal, it is not unlikely that there may be a repetition of recent unpleasant experiences. It is yet a serious question whether or not we have heard of the last case from the recent invasion.

"These are certainly serious considerations for San Francisco, and for all those who are directly or indirectly connected with its vast mercantile and maritime interests. She has in her very midst

the most threatening of all contributing elements of plague propagation in the invitingly filthy condition of her Chinese quarter. * * *

"I am confident from what I know of the disposition on the part of the leading citizens that it will all be right in time if only a little patience is exercised and sister States are willing to await the events of the next few days. It seems hardly necessary to elaborate the idea concerning the absolutely filthy conditions of the district, but the good citizens of New York have no idea of unsanitary conditions of the worst dwellings of New York as compared with the better ones of Chinatown.

"In my different tours through the dark, reeking subterranean passages of Chinatown I could not help wishing that our own Board of Health of New York could handle the situation for just one week.

"I confess a commendable pride as a citizen of New York in our own Health Department, that is only equal to that of the Fire Department.

"I am confident, in the first place, that if such a board had full sway in this city the conditions, such as at present exist, would be absolutely impossible, and if they were found to exist there would be such an army of inspectors, such a house to house visitation, as would astonish the most stolid and impassive Chinaman.

"I do not say this as any reflection against the Board of Health of San Francisco, but I cannot help wishing that the New York Board was here for just one week, and then what would the citizens of New York do under similar circumstances to those prevailing in this city?

"Some of the citizens said, 'Why, it is impossible.' I have answered, 'If you had our Board here, they would show you whether it was or not.' It is only a question of means; the end is sure. But the citizens of San Francisco are thoroughly appreciating this fact, and I think we can afford to wait and see."

Finally, having concluded his observations, as per interview ("The Call"), June 2:

"After having visited every section of Chinatown under the escort of the police and of the health authorities, both Federal and local," said Dr. Shrady, "I have come to the conclusion that this plague scare in San Francisco is absolutely unwarranted. I am thoroughly convinced that there really was no danger of the plague and that virtually it did not exist in this city. Of course I cannot

say what the future will bring forth, but I am sure that no danger threatens the city. The decision of Texas in quarantining against California was a deplorable mistake under the circumstances as I have found them to be, and it is to be hoped that the health officer of that State, who was here, will see his way clear to lift the quarantine at once, because it has had no foundation in reason, good judgment or matter of fact. I came here on a special mission to tell the truth. I have concluded my investigations and I am about to start for home.

"I came out here to see a living case of plague. I failed to see a single case of live plague, and saw only one in a corpse. It is my impression that plague is virtually stamped out, especially in view of the action of the health authorities in keeping it where it was, and in view of the determination of the Board of Health to fight it on rational, scientific lines. I have covered the ground thoroughly and have received the assistance and hearty co-operation of every Federal, State and local official, and I am convinced that the only duty remaining for the people of San Francisco is to cleanse Chinatown. Chinatown is known throughout the world as one of the filthiest quarters in existence in a civilized city, and San Francisco will not be relieved from the suspicion of other cities and States until it has removed this plague spot."

"Bulletin," June 5: Mission Rock is rapidly being converted into a detention camp. Some time to-morrow part of the floating population of Chinatown will be transferred thither. It will be necessary to cart or drive five thousand coolies, supposed to be living tenements of bubonic plague bacilli, through the streets to the water front. Dr. Kinyoun will be grand marshal.

In a few days a detention camp will be established on Angel Island for the indigent Chinese who may not find room on Mission Rock.

To the time of this writing, June 15th, there have been two or three more deaths from plague reported—all told, 11—on *pathological demonstration.* Nevertheless, on presumed superior knowledge, the Governor of California (Press dispatch, San Francisco), June 14, sent a long communication to Secretary of State Hay in reply to the latter's request for information regarding the alleged existence of bubonic plague in the Chinese quarter of San Francisco. In his report Governor Gage says:

"From the best light I have been able to procure, and from a most careful consideration of the whole subject, I am pleased to

inform your excellency that I firmly believe no case of bubonic plague has at any time existed within the borders of our State. There have been in all only eleven suspected cases among a population of 35,000 Chinese, 15,000 of whom are quarantined. The examinations made after death of the bodies of the suspected cases fail to furnish satisfactory proof of plague."

Meanwhile the California State Board of Health issued a report, May 29: The State Board of Health of California has carefully inquired into the facts, and officially reports them to you as follows: There have been nine deaths of the following dates, the first, March 6; second case, March 15; third case, March 17; fourth case, March 18; fifth case, April 24; sixth case, May 11; seventh case, May 11; eighth case, May 14; ninth case, May 15.

"All the cases were Chinese found dead in their unsanitary quarters known as Chinatown. That they died of bubonic plague was established by bacteriological investigation by the city Board of Health, and confirmed by Dr. Kinyoun, the U. S. quarantine officer of the port of San Francisco.

"At this time there are no known cases of bubonic plague in California. The Board of Health of the city of San Francisco is taking every precaution to prevent the recurrence of the disease, with every hope of success. No other part of the State has been nor is now affected."

COLORADO.—Denver, 170,000: Total deaths in the month of April, 177; death rate, 12.48; deaths under five years, 29; from cerebro-spinal meningitis, 1; scarlet fever, 2; diphtheria, 2; erysipelas, 2; acute lung diseases, 24; consumption, 43; cancer, 4.

To whom it may concern:

In accordance with the powers conferred by law upon the State Board of Health, and for the purpose of preventing the introduction of bubonic plague into the State of Colorado, it is hereby ordered that, until further notice, no Chinaman or Japanese shall be allowed to enter the State of Colorado without a certificate signed by the health officer of the city from which he has come, to the effect that he has not been exposed to bubonic plague during the six weeks immediately preceding his departure.

By order of the State Board of Health. G. E. TYLER,
Denver, Colorado, May 28, 1900. *Secretary.*

CONNECTICUT.—The State Board of Health Bulletin reports 1,678 deaths during April, representing 168 towns, with an aggregate population of 912,159. This was 13 less than reported in March, and 509 more than in April of last year, and 473 more than the average number of deaths in April for the five years preceding. The death rate was 20.4 for the large towns, 26.9 for the small towns, and 22.0 for the whole State.

From influenza, there were 61 deaths; measles, 31; scarlet fever, 7; cerebro-spinal meningitis, 6; diphtheria and croup, 24; whooping-cough, 11; erysipelas, 8; typhoid fever, 12; diarrhœa, 24; pneumonia and bronchitis, 424; consumption, 161. There were 339 deaths under five years of age.

DISTRICT OF COLUMBIA, 294,674—89,288 colored. Report for four weeks ending June 2: Total deaths, 414—188 colored, and 119 under five years of age. Death rates, white, 14.3; colored, 27.2; total, 20.7; from typhoid fever, 6; diphtheria, 8; acute lung diseases, 49; consumption, 55; cancer, 10.

Report for the fiscal year ending June 30, 1899: Population, 287,462—89,030 colored. Deaths from all causes, 6,026—611 more than in previous year. Death rates: white, 16.99; colored, 29.81: 20.96—an increase of 0.37 over the average for the previous five years; 1,811 of decedents were under five years of age. Deaths from zymotic diseases, 1,110—diphtheria, 191; typhoid fever, 169; grippe, 152; cerebro-spinal meningitis, 73—total increase of deaths from zymotic diseases over the preceding year, 349. Deaths from tuberculosis, 1,062—564 colored: 17.62 per cent. of total mortality. Deaths from cancer, 177. Elaborate statistical tables and charts exhibit a great amount of sanitary work.

ILLINOIS.—Chicago, May 26, 1900: According to the bulletins published by the Department of Health, summed up in a recent popular lecture by Health Commissioner Reynolds, the average duration of life in Chicago has more than doubled during a single generation. In 1869 the average years for every individual decedent were 13.9. In 1898 they were 29.4 years, an increase of 111.5 per cent. Based upon figures of population, it has been shown that with an average annual death rate of 14.4 per thousand during 1894-98, compared with a like rate of 40.6 per thousand between 1845-54, there has been a saving of 40,050 lives per annum out of the average population of the last five years. Illustrating the improved conditions of a typical American city, it is a much better showing than that for England and Wales, made the

subject of congratulatory comment during the Victorian jubilee in 1897. It was shown on that occasion that during 1838-47 the mean annual death rate in those countries was 22.16 per thousand, while for the decade 1881-90 it had fallen to 19.1 per thousand.

IOWA.—Davenport, 42,000: Total deaths in April, 49; death rate, 14; deaths under five years, 4; from typhoid fever, 2; respiratory diseases, 9; consumption, 4; cancer, 1.

LOUISIANA.—New Orleans, 300,000—90,000 colored: Total deaths in April, 643—321 colored; death rates: white, 18.4; colored, 42.7; total, 25.7; deaths under five years, 160—79 colored; from cerebro-spinal meningitis, 2; typhoid fever, 7; malarial fevers, 11; acute lung diseases, 67; consumption, 77; cancer, 9.

INDIANA.—Indianapolis, May 10: The total number of deaths reported to the State Board of Health during April was 2,981, being 236 less than occurred in March. The annual death rate per 1,000, based upon the April figures, is 13.7. Consumption caused 334 deaths, an annual rate of 154 per 100,000. Typhoid fever caused 33 deaths; diphtheria, 21; croup, 8; scarlet fever, 13; measles, 23; whooping-cough, 21; pneumonia, 463; diarrhœal diseases, 18; cerebro-spinal meningitis, 51; influenza, 51; cancer, 81; violence, 116; smallpox, 2. Measles was more destructive than either diphtheria or scarlet fever.

KANSAS.—Topeka, June 8, 1900: Reports of *smallpox* to the Secretary of the State Board of Health during the month of May from 18 localities: 176 cases, with 8 deaths—a marked increase over the previous month; but it "is under control and will soon be stamped out."

MARYLAND.—Baltimore, 541,000—78,000 colored: Total deaths during April, 974—241 colored; death rates: white, 18.4; colored, 36.1; total, 20.9; deaths under five years, 273—101 colored; from typhoid fever, 7; croup and diphtheria, 26; measles, 6; scarlet fever, 1; influenza, 21; acute lung diseases, 236; consumption, 84; cancer, 33.

MASSACHUSETTS.—Boston: Report of deaths for March, 1,434 (against 1,001 in January and 933 in February), which consider-

ably exceeds the record of any month in any previous year. In January, 1890, there were 1,309 deaths, and in July, 1896, 1,282 deaths. During the ten years 1890-1899 in only one instance did the maximum monthly mortality for the year occur in March, as it did in 1897, when there were 1,062 deaths.

The excessive mortality for March, 1900 (when the death rate rose to 31.00), appears to be chiefly owing to the prevalence of influenza and of diseases of the respiratory organs. Thus, there were 116 deaths from influenza in March, against 12 in January and 9 in February, and 388 deaths from diseases of the organs of respiration in March against 177 in January and 186 in February. Deaths from pneumonia rose from 96 in January to 102 in February and 196 in March, while deaths from broncho-pneumonia increased from 31 in January and 40 in February to 103 in March.

Pulmonary and larnyngeal tuberculosis have now been added to the list of diseases of which compulsory notification is required. After removal or death of the patient, the Board of Health will disinfect the premises.

Increased penalty for spitting adjudges that the deposits of sputum in public places is a menace, source of filth and a cause of sickness, and orders:

"That spitting on the floor, platform or steps of any railroad car or railway station, public building, hall, church, theatre, market, or any sidewalk immediately connected with said public place, is hereby prohibited.

"The penalty for the violation of this is a fine not to exceed $100."

MICHIGAN.—The Secretary of the State Board of Health, reports for May, 1900: *Consumption* at 167 places; *measles* at 233 places; *scarlet fever* at 146 places; *diphtheria* at 58 places; *typhoid fever* at 54 places; *whooping-cough* at 46 places; *cerebro-spinal meningitis* at 14 places, and *smallpox* at 14 places. Reports from all sources show *consumption* reported at 6 places more; *measles* at 29 places more; *scarlet fever* at 25 places more; *diphtheria* at 21 places more; *typhoid fever* at 9 places more; *whooping-cough* at 17 places more; *cerebro-spinal meningitis* at 7 places more, and *smallpox* at the same number of places, when compared with the preceding month.

The number of deaths reported during the month was 2,804—682 under four years; death rate, 13.8; deaths from pulmonary

tuberculosis, 190; other forms of tuberculosis, 42; typhoid fever, 35; diphtheria and croup, 26; scarlet fever, 20; measles, 42; whooping-cough, 35; pneumonia, 269; diarrhœal diseases, under five years, 73; cerebro-spinal meningitis, 37; influenza, 68; puerperal septicæmia, 13; cancer, 112; violence, 147. There was some decrease shown in the mortality from tuberculosis, diphtheria and croup, measles, pneumonia, influenza, puerperal septicæmia, cancer and violence, as compared with the preceding month. Other causes of death show very slight change.

MINNESOTA.—St. Paul, 200,000: Total deaths in April, 126; death rate, 7.56; deaths under five years, 34; from typhoid fever, 1; diphtheria, 2; scarlet fever, 1; acute lung diseases, 23; consumption, 15; cancer, 4.

NEW JERSEY.—Newark, 250,000: Total deaths in four weeks ending June 2, 316; death rate, 19.5; deaths under five years, 171; from diphtheria, 16; smallpox, 1; typhoid fever, 2; acute lung diseases, 66; consumption, 41.

Trenton, June 7.—The Board of Health last night adopted an amendment to the health code, and by this action placed consumption in the same category as smallpox, diphtheria, yellow fever and other contagious or infectious diseases.

NORTH CAROLINA.—The State Board of Health Bulletin reports for the month of April, in nineteen towns, with an aggregate population of 116,950—49,575 colored: Total deaths, 189—97 colored; death rates: white, 16.3; colored, 22.8; whole, 19.2; deaths under five years, 43—30 colored; from typhoid fever, 1; scarlet fever, 1; whooping-cough, 1; pneumonia, 31; consumption, 17; brain diseases, 3; heart diseases, 7; diarrhœal diseases, 7; accident and violence, 9; all others, 112.

OHIO.—Cleveland, 395,000: Total deaths during April, 641; death rate, 19.44; deaths under five years, 240; from typhoid fever, 33; scarlet fever, 2; croup and diphtheria, 10; cerebro-spinal meningitis, 1; erysipelas, 1; acute lung diseases, 128; consumption, 37; cancer, 13.

The State Board of Health at its meeting, May 9, elected Dr. William T. Gemmill, of Forest, as president, and Byron Stanton, of Cincinnati, as vice-president, for the year beginning October 1, the old officers holding over until that time.

PENNSYLVANIA.—Philadelphia, 1,266,832: Report for four weeks ending May 26: Total deaths, 1,970; death rate, 20.1; deaths under five years, 657; from croup and diphtheria, 99; typhoid fever, 38; scarlet fever, 26; bronchitis and pneumonia, 339; consumption, 210; cancer, 56.

Pittsburg, 320,000: Report for four weeks ending June 2: Total deaths, 458; death rate, 18.5; deaths under five years, 143; from croup and diphtheria, 12; typhoid fever, 19; scarlet fever, 4; bronchitis and pneumonia, 76; consumption, 32; cancer, 12.

SOUTH CAROLINA.—Charleston, 65,165—36,295 colored: Report for four weeks ending June 2: Total deaths, 140—93 colored; under five years of age, 48; death rates: white, 21.1; colored, 33.2; whole, 27.1; from consumption there were 24 deaths, of which 21 were colored.

TENNESSEE.—Memphis. Report for April: Total deaths, 172—95 colored; under five years, 34; death rates: white, 7.7; colored, 9.5; whole, 8.6; from typhoid fever, 1; malarial fever, 6; consumption, 18; respiratory diseases, 69; cancer, 1.

UTAH.—Salt Lake City, 70,000: Total deaths in April, 40; death rate, 6.83; deaths under five years, 13; from measles, 1; respiratory diseases, 17; consumption, 3; cancer, 2.

WASHINGTON.—Seattle, 90,000: Report for April: Total deaths, 84; death rate, 11.2; deaths under five years, 16; from typhoid fever, 2; scarlet fever, 1; whooping-cough, 1; acute lung diseases, 17; consumption, 10; cancer, 5.

MANITOBA.—The Provincial Board of Health report for 1899 shows remarkable exemption from epidemic diseases of all kinds, which is attributed to the more enlightened ideas which the people have as to the causation of these diseases and the value of preventative measures.

Smallpox.—Thousands of cases have occurred in the United States, and Ontario and Quebec have had hundreds, while Manitoba has had only one. The population is so well vaccinated that there is no fear of an epidemic of this disease.

THE PLAGUE SITUATION ABROAD is not encouraging. Reports

at most recent dates show that it was becoming alarmingly prevalent in Rio Janeiro; epidemic in Rosario; still prevalent at Port Said; six new cases and two deaths in Cairo June 4; reported in Adelaide, Australia, and Sydney, N. S. W., and widely epidemic in India.

YELLOW FEVER is extensively prevalent in Rio Janeiro, Santos and Sorocaba; Cordoba and Vera Cruz, in Mexico. In Havana, January 1 to March 31: 41 cases, with 17 deaths; during the month of April there were 482 deaths from all causes, but none from yellow fever—the only month when there were no deaths from this disease during the past ten years, with two exceptions, February and May, 1899. Several cases have been reported during the month of May, and just as we are concluding this number, June 18, the death of General Lee's secretary is reported from it.

BOOK REVIEWS.

SOJOUS'S ANNUAL AND ANALYTICAL CYCLOPÆDIA OF PRACTICAL MEDICINE, VOL. V.: METHYL-BLUE TO RABIES. Large 8vo., pp. 662. Illustrated with Chromo-lithographs, Engravings and Maps. Philadelphia: The F. A. Davis Co.

The character of this work is thoroughly well known. Besides the excellent repertory of advanced knowledge on a variety of subjects indicated by the initial words which limit the scope of this volume, the specially contributed articles on "Nursing and Artificial Feeding," by Drs. L. Emmett Holt and L. E. La Fétra; "Disorders of Pregnancy," by Dr. Curvier; "Abnormal Parturition," by Drs. Grandin and Marx; "Pleurisy," by Dr. Alex. McPhedan; "Catarrhal Pneumonia," by Dr. Solomon Silas-Cohen, and "Lober Pneumonia," by Dr. Thos. G. Ashton, will doubtless be abundantly satisfying to the subscribers for the work, and are well calculated to increase the number of its readers. We take pleasure in commending this work to all physicians who would keep abreast with medical progress.

THE EXPOSE OF WELTMERISM—MAGNETIC HEALING DE-MAGNETIZED. By Prenton W. Pope, M. D. Price, 60 cts. Nevada, Mo.

A brochure of one hundred and twenty pages, devoted to the declared purpose of the title. "Weltmerism" is described as a pretended hypnotism, akin to Christian Science, "the all-mindness of man," whereby even the brain is only a place for the mind to dwell in, but so thoroughly subject to the will as to be entirely subservient to the intention of the mind, insomuch that even a broken or dislocated limb should offer no impediment to locomotion, because the mind has only to intend that it shall not and that it shall be healed. Its anti-Christian methods, like those of Christian Science, are well illustrated by its money-getting purposes through chicanery and imposition. Magnetism is differentiated and shown to be a power wholly apart from the devices of such impostors on the credulous as Weltmerists and Christian Scientists, who are birds of the same feather.

CONTEMPORARY LITERATURE.

INCREASING HUMAN ENERGY.

"The Problem of Increasing Human Energy," with special reference to the harnessing of the sun's energy, is discussed in the June "Century" by Nikola Tesla, whose paper is illustrated with pictures of the writer's electrical experiments. The article is one of the longest, and in some respects one of the most important, ever published in the magazine.

To increase materially the productivity of the soil, it must be more effectively fertilized by artificial means. The question of food-production resolves itself, then, into the question how best to fertilize the soil. What it is that made the soil is still a mystery. To explain its origin is probably equivalent to explaining the origin of life itself. The rocks, disintegrated by moisture and heat and wind and weather, were in themselves not capable of maintaining life. Some unexplained condition arose, and some new principle came into effect, and the first layer capable of sustaining low organisms, like mosses, was formed. These, by their life and death, added more of the life-sustaining quality to the soil, and higher organisms could then subsist, and so on and on, until at last highly developed plant and animal life could flourish. But though the theories are, even now, not in agreement as to how fertilization is effected, it is a fact, only too well ascertained, that

the soil cannot indefinitely sustain life, and some way must be found to supply it with the substances which have been abstracted from it by the plants. The chief and most valuable among these substances are compounds of nitrogen, and the cheap production of these is, therefore, the key for the solution of the all-important food problem. Our atmosphere contains an inexhaustible amount of nitrogen, and could we but oxidize it and produce these compounds, an incalculable benefit for mankind would follow.

Long ago this idea took a powerful hold on the imagination of scientific men, but an efficient means for accomplishing this result could not be devised. The problem was rendered extremely difficult by the extraordinary inertness of the nitrogen, which refuses to combine even with oxygen. But here electricity comes to our aid; the dormant affinities of the element are awakened by an electric current of the proper quality. * * *

In the manufacture of nitrogen compounds by this method, of course, every possible means bearing upon the intensity of this action and the efficiency of the process will be taken advantage of, and, besides, special arrangements will be provided for the fixation of the compounds formed, as they are generally unstable, the nitrogen becoming again inert after a little lapse of time. Steam is a simple and effective means for fixing permanently the compounds. The result illustrated makes it practicable to oxidize the atmospheric nitrogen in unlimited quantities, merely by the use of cheap mechanical power and simple electrical apparatus. In this manner many compounds of nitrogen may be manufactured all over the world, at a small cost, and in any desired amount, and by means of these compounds the soil can be fertilized and its productiveness indefinitely increased. An abundance of cheap and healthful food, not artificial, but such as we are accustomed to, may thus be obtained. This new and inexhaustible source of food-supply will be of incalculable benefit to mankind, for it will enormously contribute to the increase of the human mass, and thus add immensely to human energy. Soon, I hope, the world will see the beginning of an industry which, in time to come, will, I believe, be in importance next to that of iron.

EDUCATE THE NEGRO?

It is often said that all that is required to solve the race question in the United States is to educate the negro. In an article of

great ability in the June number of the "North American Review," entitled "Will Education Solve the Race Problem?" Prof. J. R. Straton shows that there are good reasons for thinking that this opinion is a popular delusion. The statistics which he produces are startling in the extreme, indicating that as the education of the negro advances he is apt to give freer vent to his criminal propensities. Thus, according to Professor Straton's figures, the proportion of negro criminals to negro population is highest in the Northern States and lowest in those Southern States in which the illiteracy of the colored race is most pronounced. Professor Straton accounts for the degeneracy which appears to be going on steadily among American negroes, not only in morals, but even in physique and in thrift and industry, by the law which dooms inferior races environed by advanced civilization to injury or even destruction. He says:

"Do not these facts demonstrate that the weaker races imitate most what is bad and profit little by what is good in the higher civilization, and consequently that the principle of the unconscious self-destruction of a weaker people in contact with a stronger is tenable? We take these savages from their simple life and their low plane of evolution, and attempt to give them an enlightenment for which the stronger races have prepared themselves through ages of growth. This we call 'The White Man's Burden,' but it seems rather to mean the Black Man's Death. These weaker races are brought into contact with all the allurements, temptations and dangers, the terrible strain of this civilization, without having grown into the strength which would enable them to safeguard themselves against the dangers, to eschew the bad and use merely the good in the higher forms. Like little children in a tropical garden, they eat all fruit merely because it looks pretty or tastes sweet, not knowing that deep in its dangerous heart lies the poison which destroys. It is like taking a strong stimulant. It exhilarates and buoys up for the time; but, all the while, it is quietly eating out the very vitals of its victim."

Stephen Crane's crisp, distinctive description of "The Battle of Bunker Hill," in June "New Lippincott," is a masterpiece. This is his fourth paper in the "Series of Great Battles of the World."

THE CAUSE OF THE FAMINE.

India is a country not quite half as large as the United States, with four times its population. These 300,000,000 people must

be fed from their own crops, as there is, relatively, no manufacturing resource to buy food with. There are parts of India with a population of 1,000 people to the square mile; and there are millions upon millions of farm laborers, vagrants, gypsies, and nondescript classes, whose means of living, even in times of plenty, are inscrutable. In a normal year the country, as a whole, produces a little more food than is actually necessary to support its people. But the crops are dependent on the monsoons—the southwest monsoon in the beginning of summer, and the northeast monsoon in the winter. If these periodic rains are late, or are insufficient in quantity, trouble comes, and the spring and winter crops of wheat, barley, and pulses in the north, and of rice and millets in the south, begin to suffer. When the monsoons fail absolutely, there is destitution in the affected district, and when a persistent succession of failures and partial failures occurs, there comes a great and terrible famine, like that the country is now groaning under. Since the first great famine of which there are records devastated the land in 1770, when 10,000,000 perished in Bengal alone, India has scarcely passed a decade free from scarcity of grain in one district or another. The British Government expects a drought about twice in every nine years, a famine once in every eleven or twelve years, and a great famine like the present about twice in a century.—From "The Progress of the World," in the "American Monthly Review of Reviews" for June.

A SWEEPING DEMAND.

The Hydrographer of the Navy has many convincing proofs of the slight knowledge possessed by the world at large in regard to the scope of the work of the Hydrographic Office. There are very few people who are aware that its charts guided our fleets into Spanish harbors, pointing out every reef and shoal of danger; that mariners everywhere look to them for accurate predictions of winds, storms and treacherous currents; that the appliances, organization and methods by which these results are obtained are nothing less than marvellous.

But the mere fact that the United States Hydrographic Office issues "charts" is widely understood, as was shown recently when a spruce little man bustled into the office and asked for "charts."

"What charts do you want?"

"All of them," was the sweeping answer.

When he was told that they numbered many thousands and, therefore, it was necessary to specify for what seas or harbors he wanted them, he showed great surprise and disappointment, and announced that he was a "ladies' tailor" from San Francisco seeking "dress charts"!—Alethe Lowber Craig in the June "New Lippincott."

IN SOUTH AFRICA.

Klyda R. Steege, writing of South Africa in the June "St. Nicholas," tells of the discovery of gold in the Transvaal, and the growth of Johannesburg.

A German named Mauch was the first to discover evidences of gold in the Transvaal, but, failing to interest his fellow-countrymen in mining in so difficult and distant a country, nothing came of his discovery. Not until an Englishman, Struben by name, found the gold in the Transvaal again, was any special interest taken in the matter. He spread the news, and in a year's time from the first opening of the country twenty thousand people had arrived on the spot, eager to make fortunes. They came from every part of the world and included every class of persons—miners from California and other Western States, younger sons of well-known English families, adventurers, and speculators, and people who had given up respectable, steady occupations and businesses to join in the mad rush for gold. This crowd of excited, eager men (some women and children were among them, too) pitched tents, or nailed together a few boards for protection, or built frail, leaky shanties with roofs of iron bent into wavy ridges—corrugated—and began their new life.

They were over a thousand miles from the seacoast, and some of them, who could not find any other method of traveling, or could not afford another, had come, after leaving the railroad, five hundred miles on foot.

This was in 1886, and now, where the first little wooden sheds and tents were put up, stands Johannesburg, a city of one hundred thousand inhabitants, a fine town with good buildings, electric lights and street railways.

Johannesburg is a city where everybody speculates, and a great amount of money is wasted every day. People make money quickly, and spend it as fast, and one pays for almost everything a great deal more than it is worth.

THE SANITARIAN.

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THE DANGER TO PUBLIC HEALTH IN DEFAULT OF RURAL HYGIENE.*

BY HARVEY B. BASHORE, M. D.

A sanitary cordon with a watchful eye keeps disease from our borders and cities are spending thousands of dollars to complete their sanitary arrangements; yellow fever, cholera, typhus and the plague are almost excluded. A great number of the large cities at least have good water and fairly effective sanitary laws. But, while State and municipal hygiene is making rapid progress, very little is doing for the rural districts. Indeed, the neglect of rural hygiene to-day is about the same as it was a hundred years ago. Yet rural hygiene is a pressing need not only to the rural dweller, but even to the inhabitants of the great cities.

Continuous habitation in one place and the consequent accumulation of filth are beginning to tell even in far out-lying localities, until we are now brought face to face with the strange fact that the most healthful residence is not, as proverbially supposed, in the country, but in the great cities. Anomalous as this may seem, it is only too true. Take, for example, the one factor of water supply. Is there any intelligent person who would not rather drink from the public supply of almost any city (excepting, of course, Philadelphia) than from any of the numerous wells scattered throughout the country?

The country people love their old wells, but sentiment must give way to science and fact, for the old well does not at all justify what people used to think of it. The truth is that the chances of getting typhoid fever from ordinary city water is just about 75 per cent. less than the chances of getting it from the country well or spring. Even in thinly settled Canada, where they have ex-

*Read at the meeting of the "Associated Health Authorities and Sanitarians of Pennsylvania," held at Mechanicsburg, May 24, 1900.

amined a thousand farm wells, the water was found pure in only 25 per cent. of the number. What then must the old well be in our own thickly-settled communities?

"The old oaken bucket,
The moss-covered bucket," etc.,

is all very well in poetry, but poets have never been conspicuous as sanitarians.

"But how does the old well affect me?" the city dweller asks. "I don't drink its water, and so why should I bother about it?"

You forget that perhaps your milk supply—and we all use milk—comes from that very farm whose well you deem of no concern, and that perhaps the milk cans are washed with water from it, and that possibly—indeed, rather likely—the well has been exposed to typhoid poison at one time or another for many years. Anent such knowledge, is it not worth while now to give the country well a thought? If your family sicken and die from typhoid, it will be; but too late to profit by the lesson.

Thus the ordinary city dweller in his thoroughly drained house, furnished with nickel-plated plumbing and porcelain-lined bath-tubs, surrounded by clean asphalt streets, gives little thought to the sanitary condition of his adjoining country. Why should he care? He is perhaps sure of his milk supply and he is protected on every side by all the safeguards that modern science can give—so he thinks. Yet he is not secure. A band of wandering tramps or a party of workmen are camping far out on the watershed of the stream that gives him water. The men become sick—it may be with typhoid—and the poison gets into the nearest stream and finally works downward toward the pumping station. The great, throbbing, busy city knows nothing about these sick, poor tramps out in the country, or, if it did, it could give them but a passing thought. The city will give them beds in a hospital; this may save the tramp, but not, perhaps, until after he has endangered the city far in excess of what it would have cost to have had a sanitary watchman even beyond the city's borders.

Again, in another way, the country is a source of danger. In the city, contagious diseases are pretty thoroughly isolated; but in the country, outside of the municipal areas, isolation, although it may be the State law, is more or less a dead letter, for there is no one to enforce it. What is the result? I have seen workmen who

lived in the suburbs of a large city ride in a crowded street-car to their work in the city, while there was scarlet fever in their families at home. Worse even than this: I have seen a woman go shopping on Saturday night to the same city while diphtheria was raging in her home just outside the city limits. Yet this city pays a good deal to stay the ravages of these very diseases; yet by five trolley lines and by steam roads from eight different directions may disease be carried to that city, simply because there is no surveillance over the unincorporated country.

Very recently the following happened within this county: A child died of diphtheria in one of the unincorporated suburbs of Harrisburg. There was no public funeral, but the friends were to "meet at the house." The uncle of the dead child, who happened to live somewhere in this valley (Cumberland), with his wife and four children, attended the funeral. To do this necessitated their traveling by railroad to Harrisburg and then by trolley several miles into the country; this they did, and returned in the same way. Who can tell the number of persons exposed to a fatal disease by this one act of carelessness?

We all know about tuberculosis—the great white plague—that curse of civilized man which kills one-seventh (1-7) of all who die. We know that it is frequently transmitted by the milk from tuberculous cows. So it becomes very interesting to the city and town dweller whether the countryman who furnishes him with milk has healthy cows or whether he has them properly housed.

That nearby swamp back of the town, where the lover of nature goes to find rare orchids or other flowers that hide themselves from man's view, is worthy of some consideration; yet, as sanitarians, we must admit that a swamp is a blight on the sanitary landscape when it is near the dwellings of men, and especially is this so since Ross has discovered that the spotted-winged mosquito, which breeds there, is a bearer of the germ of malaria.

Thus there are many ways in which the lack of rural sanitation is a menace and a pressing danger, not only to the rural dweller, but even in a great degree to the surrounding towns and cities; and so long as rural sanitation is so much neglected, municipal hygiene will continue to be ineffective.

The Pennsylvania State Board of Health has tried to obviate these defects by endeavoring to have a law passed permitting the State to appoint health officers for such places; but the legislature compromised the bill and made a law authorizing school boards

to act as boards of health in their respective districts. In many places, Dr. Lee tells me, this has been very effective. I have seen other places where it is not, but it is only considered a makeshift until we get a wiser legislature.

In this practical age, everyone wants to know: Does it pay to have rural hygiene? If your own child gets diphtheria because he sits next to a rural diphtheria patient on the cars, if your own wife gets tuberculosis because she has been getting tuberculous milk, or if you yourself get typhoid fever because you stopped, to slake your thirst, at some village pump—if all of these are apparent, or if any one of them has found a victim in your own family, I know that you will agree with me that it would pay to have rural hygiene, even if it should add one mill more to the tax rate.

THE EFFECT OF SUMMER HEAT UPON THE PUBLIC HEALTH.*

By Henry Dwight Chapin, M. D., New York.

The effect of climatic changes upon the public health is a subject of great interest and importance. When certain conditions are known to be approaching, it is the duty and privilege of preventive medicine to indicate plainly where the dangers lie, and what may be done in an endeavor to obviate them. The depressing effects of continuous heat may be shown most on the nervous and digestive systems, and the extremes of life are especially vulnerable. With reference to the gastro-intestinal tract, not only does great and continuous heat depress the digestive power and hence make for disease, but the food supplies also depreciate from the influence of heat, and fermentation has frequently begun before the nutriment is ingested.

A glance at the summer death rate from gastro-intestinal diseases, in comparison with the winter rate, is suggestive in this connection. Four summer months are compared with four winter months during the past five years in the following tables, which will be preceded by a statement of the mean temperature and mean humidity of the summer months:

*Read before the Medical Society of the County of New York, May 28, 1900.

	Mean Temperature (Fahr.).				Mean Humidity.			
	June	July	Aug.	Sep.	June	July	Aug.	Sep.
1895. . . .	72.80°	72.50°	75.60°	70.80°	71	78	64	63
1896. . . .	69.80	76.80	76.10	67.20	69	72	69	74
1897. . . .	67.40	75.90	73.20	66.90	69	71	69	65
1898. . . .	71.10	76.00	75.30	70.20	73	80	78	69
1899. . . .	74.10	76.20	75.11	66.10	68	66	75	64

	Deaths from Gastritis, Gastro-Enteritis, and Enteritis.				Deaths from Diarrhœa, Under Five Years.			
	June	July	Aug.	Sep.	June	July	Aug.	Sep.
1895. . . .	112	344	223	179	281	1,084	564	441
1896. . . .	148	313	260	176	363	880	446	245
1897. . . .	116	301	248	203	220	914	650	319
1898. . . .	75	318	304	244	157	834	643	461
1899. . . .	150	391	221	210	176	608	276	187
Totals. .	605	1,667	1,256	1,012	1,197	4,320	2,579	1,653

	Nov.	Dec.	Jan.	Feb.	Nov.	Dec.	Jan.	Feb.
1895. . . .	34	54	44	51	41	35	49	29
1896. . . .	34	57	61	38	41	36	38	36
1897. . . .	43	42	47	60	46	30	39	42
1898. . . .	56	56	50	50	31	26	20	23
1899. . . .	59	54	43	41	23	25	15	34
Totals. . .	226	263	245	240	182	152	161	164

I am indebted to Dr. Tracy for access to the board of health records.

A glance at these tables shows the enormous increase of the summer mortality from gastro-intestinal diseases over the corresponding winter months. It is especially noticeable in the deaths from diarrhœa, in children under five years. One encouraging feature, however, will be seen—that there is a certain diminution in the death rate at this period during the past five years. This is doubtless due to the improved sanitary condition of the city, with a stricter supervision of the food supply, especially milk. There has also been a certain improvement in drainage, sewerage, and the ventilation of dwellings.

It has long been recognized by sanitarians that the death rate among infants, and especially the prevalence of diarrhœal diseases among them, are sensitive tests of the general sanitary condition of the community.

One of the greatest dangers during the heated term consists in sunstroke. The following table shows the deaths from this cause during the past five years, during the four summer months:

DEATHS FROM SUNSTROKE.

	June.	July.	August.	September.
1895.	45	4	18	13
1896.	5	30	725	—
1897.	3	28	2	6
1898.	—	75	46	253
1899.	80	10	5	—
Totals.	133	147	796	272

In looking over the records of the board of health, the most fatal recent years from sunstroke are 1892, 1896, and 1898. The deaths from sunstroke during 1896 reached the enormous number of 765; of this total 671 occurred in one week, and 52 during the weeks immediately before and after, making a total of 723 during the three weeks covering the extreme heated period. If we take the day when the greatest number of deaths occurred as a culminating point of the period of extreme heat in each case, including in each period all days when the temperature rose to 90° F. or more, we find that the culmination in 1892 was on the fifth day, and in 1896 on the eighth day. The greatest number of deaths in any one day was 350 in 1892 and 386 in 1896. The noticeable increase in the number of deaths began on the second day in 1892 and on the fifth day in 1896. Whether this postponement of the fatal effect of extreme heat has been due to a difference in other meteorological conditions than heat alone, or whether it is due to an improved sanitary condition of the city, rendering the population more vigorous and more capable of resisting the morbific effects of heat, cannot be positively determined.

The year 1898 was an exceptional one in that the vast majority of deaths from sunstroke, 253, occurred in September.

A most depressing influence, where there is continuance of great heat and humidity, is the coexistence of hot days and hot

nights. If the nights are so warm that sleep is interfered with, there is little opportunity for recuperation from the exhaustion of the day.

Depression of the nervous system by heat is apparent in lassitude and a general vulnerability to disease. In two nervous affections, the death rate is actually higher in summer than in winter. Thus, during the four summer months of this period, there have been 1,399 deaths from meningitis reported, while during the months of November, December, January, and February of the same period, there were only 1,040 deaths from meningitis. Probably a certain number of cases of meningitis reported were, however, spurious hydrocephalus following infantile diarrhœa. During the five years there were 781 deaths reported from convulsions, while during the winter months the number reached only 737.

In looking up the deaths from alcoholism, there have been fewer reported in summer than in winter, 460 being the number for the summer months, against 525 for the four winter months of these five years. It is well known, however, that alcoholism is a common predisposing cause of death in sunstroke.

The actual increase of sickness in any community due to summer heat is hard to estimate; everything possible, however, that preventive medicine can suggest should be employed to obviate the deleterious effects of heat. A consideration of this subject must include in its scope an oversight of the city, the house and the life and habits of the people. The responsibility of the city is to be doubly watchful in the interests of public health; the streets must be kept scrupulously clean, all garbage and decaying animal and vegetable matter must be promptly removed and destroyed. Perishable food-stuffs, particularly cow's milk, require the greatest watching and regulation. As hinted above, the work of the board of health in this connection has already borne fruit.

With reference to milk, while a minimum proportion of cream is now called for by law, there should be a certain standard of freshness as well. The number of bacteria found in each cubic centimetre of milk bears a direct ratio to the age of the milk, as well as the proportion of lactic acid. What is needed is a better regulation of the city's milk supply at its source, viz., the dairy farm. A committee of this society is now at work on this problem and hopes to be able to secure a fresher and cleaner milk for all desiring it.

A very efficient way in which the city can modify the deleterious effects of the heated term is by planting trees and furnishing small parks and breathing-places. In the "Popular Science Monthly" for February, 1899, Dr. Stephen Smith shows how trees are of the greatest utility in modifying and equalizing climatic conditions. He calls attention to the fact that an average temperature of the air of 54° F. is best adapted to public health, as at that temperature the decomposition of animal and vegetable matter is slight and normal temperature is most easily maintained. Every degree of temperature above or below this point requires an action of the heat-regulating power to maintain a proper equilibrium.

In a densely populated city, the summer heat is conserved and reflected by the stone and asphalt of the street as well as by the bricks and mortar of buildings. Even during the night, the stones, by retaining their heat, prevent any appreciable fall of temperature. Here is where the modifying effects of trees can be most beneficial. As trees maintain an average mean temperature of 54° F. in all seasons, it is easy to see what a constant cooling influence they possess in an atmosphere of 90°. Add to this the constant exhalation from the leaves of watery vapor, that has been absorbed from the moisture in the soil and from the surrounding air, and the cooling effect is much enhanced. This takes place most actively during the heated portion of the day when it is most needed.

A general purification of the air is not the least benefit to be derived from vegetation, as carbonic acid is absorbed and oxygen given out, just the reverse of what takes place in the animal economy. The purifying and cooling influence of trees placed uniformly through the city would have a marked influence on the public health in summer. The Tree Planting Association of New York has proven that various species of trees are adapted to our soil, and with a little care can be made to thrive. It seems, however, that in a matter that concerns not only the health but the beauty of the town, the city itself should be responsible for a uniform and continuous effort. If our thoroughfares were lined with shade-trees, the summer heat would not be so intolerable and unhealthful. The construction of the underground road through upper Broadway will injure the life of the beautiful rows of trees now planted in that thoroughfare. It is much to be hoped that not only in the interests of beauty, but of public health as well, efficient steps may be taken to preserve the life of these trees.

New York is bare enough without sacrificing any vegetation in a satisfactory state of growth.

With reference to the domicile, the proper efforts must be made in the line of extra cleanliness. Food of all kinds must be removed when the meal is ended and all decaying refuse be not allowed to accumulate. Sometimes by keeping rooms closed during the heat of the day, and thoroughly aired at night, a certain equalization of temperature will result.

With reference to individual hygiene much may be accomplished by a proper observance of the laws of health, especially with reference to eating and drinking. Doctors must especially protest against the indiscriminate use of alcoholic liquors during a prolonged hot spell. Eating to excess of nitrogenous food and rich and "made-up" dishes is also injurious. Overfatigue during the heat of the day should also be discouraged. The temperature of the body may often be satisfactorily lowered by a tepid bath, the effects of which will often remain longer than when a cold bath is used.

With reference to food, extra care must be taken that it is fresh, as a slight spoiling is most disastrous to the consumer. This is particularly true with reference to the universal food, cow's milk. It is estimated that there are 146,600 children under the age of three years in the boroughs of Manhattan and Bronx, or 6.72 per cent. of the whole population. This immense number subsists principally upon milk. Recent studies show that if cow's milk can be properly cooled it will keep a considerable time, and is much better than relying too largely upon superheating. Here is where the subject of ice comes properly under the physician's notice. Any difficulty in the free procuring of ice by the poor during the heated months, whether from a natural scarcity of this article or from a cornering of this staple by commercial greed, is a public calamity.

In 1896, during the heated term the death rate among little children rose to such an alarming state that the board of health requested the city authorities to distribute ice freely among the poor. This was done during the heated term, and doubtless resulted in a great saving of life. The streets were likewise flushed at this time.—From "Medical Record," June 9, 1900.

CONGRESS OF TUBERCULOSIS.*

NEWLY ELECTED OFFICERS AND AUTHORS.

F. T. LABADIE, M. D., New York City, Secretary American Auxiliary Committee and Delegate to the International Medical Congress 1900, Paris.

F. CROTTE, PH. D., New York City, Author Article American Congress of Tuberculosis.

ADA M. CHEVALLIER, M. D., Vice-President for British Honduras, Belize, B. H.

H. GERALD CHAPIN, ESQ., LL. D., Sec. Med.-Leg. Soc., New York City.

A. LAURA JOSCELYN, Treas.-Elect, Secretary Ex. Com. Psychological Sec. Medico-Legal Society.

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* Officers and Authors of Papers. Group No. 2. From advance sheets "Journal of Medico-Legal Society."

TUBERCULOSIS—IS CHANGE OF CLIMATE A NECESSITY IN THE TREATMENT?*

By Dr. Karl von Ruck, of Asheville, N. C.

That this question must be answered in the negative appears from the many well attested instances, in which recovery has resulted without change of climate, and the discovery of healed tubercular lesions in post-mortem examinations after death from other causes, in subjects who lived in the larger cities and under most favorable conditions, could in itself supply the proof, that the disease can be recovered from without a change in climate.

There was a period, however, and not very remote either, when a change of climate was the routine advice, and when the peculiar atmospheric conditions of certain regions and localities were considered to act specifically upon the tubercular or phthisical processes; and even now such statements are occasionally advanced in medical literature.

The study of the pathology of tuberculosis and of the life history of the tubercle bacillus, the common experience of renewed activity in tubercular lesions and of extension to previously unaffected parts in patients having made such a change of climate, and the relapses experienced by patients when after apparent recovery at a climatic resort they returned to their former climate and to their previous social and business relations, all showed that the change of climate alone cannot remove the cause of the disease. While, therefore, it cannot be claimed that a change of climate is a necessity to a cure, I would, nevertheless, not be understood as under-estimating its value in treatment. On the contrary, there are many direct and indirect influences of a favorable character to be derived from a climatic change, and more still from proper climatic treatment.

Climatic advantages become the more important to eventual successful treatment the more the particular patient is unfavorably situated in his home environments, and the more the disease has progressed.

A simple change of locality, regardless of climatic attributes of the place selected, often acts favorably by removing the patient

*Read at the meeting of the Medico-Legal Society and American Congress of Tuberculosis, February 22, 1900. From advance sheets of "The Medico-Legal Journal."

from his accustomed surroundings, diet and general mode of life, by which the social, household and business cares are eliminated, instead of which there are new scenes and new contacts, which act upon the patient, and his absence from home favors the observing of better and more hours of rest, recreation and exercise.

If the change is made, to what may be considered a more favorable climate, offering more opportunity for out-of-door life, subjecting the patient to a greater amount of sunlight and to purer air, and if the selected locality is relatively dry, and the opportunity for contracting cold and catarrh are thereby diminished, an important influence is gained for the patient's general nutrition and for the arrestment of the disease. But, although these and other advantages are present in the most favorable degree, they in themselves do not directly cure tuberculosis, but they contribute to the maintenance of arrested and latent processes and favor their occurrence if the disease is in an active state; while an indefinite continuance of such a changed environment aids nature in securing permanency of these results.

For the majority of cases that seek climatic benefits a simple change of climate is, however, not sufficient, and systematic and supervised climatic treatment is usually required to secure the benefits spoken of.

"Climatic treatment" and "change of climate" are by no means identical; the former is individualizing, and should secure for the particular patient the greatest possible degree of benefit, from the advantages of out-of-door life, sunshine, rest and exercise, while it should prevent all injurious influences from exposure to wind and severe weather, and from detrimental over-exertion, physical or mental.

Such climatic treatment differs further from a change of climate inasmuch as it can be carried out at home, and if we take advantage of all the out-of-door life possible, of all the sunshine that nature affords, and regulate the patient's rest and exercise according to the present condition of fever, strength, endurance and circulation, and guard against any injurious influences that may be avoided, much may be accomplished at home, and I believe more benefit would follow on an average from such climatic treatment at home, than from simple change of climate to a health resort, where the patient works out his own destiny and calls upon a local physician only after he has demonstrated that the change has done him no good.

The advantages of climatic treatment apart from regions having special advantages as to elevation, purity of air, sunshine and suitable temperatures, have been abundantly demonstrated in the numerous sanitaria in Europe, and especially in Germany, many of which are situated in localities which can make no claim to superiority of climatic conditions over the general average of the country, and in which most excellent results are being accomplished by the systematic out-of-door life and general care and supervision which the patients there receive; and while in a special institution the directing physician enjoys facilities which are often limited or deficient in private practice, I believe much more could be accomplished in the homes of the middle classes, and even in those of workingmen and poorer people, who, by reason of expense, cannot take advantage of distant travel or absence from their homes, than is now the case.

My answer to this question is implied in the foregoing remarks, but, to formulate it more concisely, I repeat:

1st. That climatic change is not a necessity.

2d. That it is advantageous and desirable, as an aid to the general care and management and to other treatment.

3d. That climatic treatment under strict and constant professional supervision at climatic resorts, or at home, deserves better consideration at the hands of the profession than it now receives.

TUBERCULOSIS.*

MY OWN CASE, WITH DEDUCTIONS DERIVED FROM THE SAME.

By John H. Metzerott, M. D., Washington, D. C.

I am one of those who believe that many cases of tuberculosis would be cured which are not cured now, were the disease diagnosed at a sufficiently early date. I am likewise of the opinion that even when the malady has progressed quite far, that a fair percentage of cures may still be effected by instituting a rational therapy. I am also convinced that the duration of life of many an apparently hopeless case of consumption may be indefinitely

*Read at the meeting of the American Congress of Tuberculosis, February 22, 1900, by title, and before the Medico-Legal Society, March 21, 1900. From advance sheets of "The Medico-Legal Journal."

prolonged by resorting to dietetic, climate and other hygienic measures. I make these assertions with a positive assurance of their accuracy, basing my deduction entirely upon what I have observed in myself, in members of my immediate family and the almost miraculous results beheld at the leading sanitaria of Europe and the Desert of our own country. Indeed I can go still further and make the extravagant assertion that few indeed are those dying of other affections than consumption, in whom the post-mortem does not show some evidence of the disease contracted during some period of life. If I speak the truth, barring a few autopsies held upon children, it has not been my lot to behold a single post-mortem in the great pathological laboratory in Vienna during an irregular attendance of nearly four years, where it could be positively said by the pathologist that the subject had been completely free from the disease during his entire life. Now, of course, there are those who will dispute this point I am making, but they will nevertheless admit that it is rather the exception to find perfectly sound lungs at death, in which there are no pleuritic adhesions or infiltrations of any sort in the lung tissue itself. If this, then, be admitted, it must also be conceded that while the death rate from tuberculosis is about one out of every seven or eight, the number who recover from the malady is infinitely greater than that of those who die—it being taken for granted, of course, that every individual having a tuberculous focus is consumptive, whether the process exhibits the tendency to heal spontaneously or not. This old threadworn fact I wish to bring out forcibly, for it emphasizes an established truth, namely, that the disease for the most part is not as fatal as is generally supposed, and that it only becomes a serious affair when it transcends beyond a certain limit, or occurs in an individual whose environment and habit favor its rapid development. The gentleman from Maryland truly and concisely expressed himself last night when he stated that "consumption was a hunger for air and light," and that it thrived among those who did not avail themselves of the bounteous gifts of old Mother Nature. If we now bear in mind that there are two principal types of tuberculosis, the florid and the fibroid, that scrofulosis and lupus are forms of tuberculosis, and that all the remaining types differ from them only in degree, it will be seen that tuberculosis, taken as a whole, is an affection for which an immense amount is and can be done.

But while more is accomplished therapeutically in the treatment

of this disease than ever heretofore, I am sure it is nothing compared to what will be done in the future, when the State recognizes the golden axiom, that the care of the health of the individual is her greatest concern. I say, gentlemen, when that fundamental principle is fully realized by the civilized governments of the world, then we may expect that most liberal provisions will be made for the consumptive, whatever his walk in life. At present, however, only a selected few have an opportunity of getting well, but I yet hope to see the day when that chance will be afforded to all, whether he or she be a provider of a family or not.

And now for my own case, which is not out of place, since it affords an argument for the rationale of the great sanitarium movement which at present is sweeping the United States. In the fall of '86, on the day when I was about to return to college, I was reluctantly induced by my mother to undergo a physical examination at the hands of a local specialist. She had observed during the summer that there was something radically wrong with my lungs, and, acting upon a well-founded and maternal impulse, had made an appointment with the doctor unbeknown to myself. I recall the hesitancy with which I entered the physician's apartments, for although I was conscious that I had an uncontrollable cough, had experienced night sweats, had suffered much from excruciating pains in the front and the back of the chest, had lost much sleep and flesh as well, and, in addition, expectorated copiously and continuously, I nevertheless, with the characteristic euphoria of a consumptive, persuaded myself that it was only a transient affair, from which I would recover sooner or later. Not satisfied with the diagnosis and the rather unfavorable prognosis rendered by the local specialist, I went to the elder Bowditch and his son, hoping that they would tell me that I could continue my studies at college. They did not give me much encouragement, and so I came to New York and consulted the late Dr. Alfred Loomis, who at first advised me to go to the Adirondacks, but later, after more mature deliberation, recommended a warmer climate, such as would be afforded by Southern California and Arizona. It is for you to infer whether the professor regarded my case as a moderately or very severe one, but I myself am inclined to think at this late date that the third stage had been reached, and that when I stepped upon the train for Los Angeles I had not one moment of time to waste. At any rate, I was supported on the arm of an attendant when I entered the office of the Sierre

Madre Villa, that time one of the popular resorts for consumptives in Southern California. For more than a week I was scarcely able to walk one hundred yards without resting. The dust of the desert had aggravated my cough, and I coughed incessantly, expectorating an alarming amount of sputa. The night sweats troubled me more than they did in the East, and I do not believe that I exaggerate when I say that if the sheets upon which I slept had been submerged in a tub of water they could not have been more drenched. Concomitant with these annoying symptoms, I experienced the most distressing pleuritic pains, which I can describe in no other way than to say that my ribs felt as though they had become displaced and by reason of their overlapping each other caused stitches in my side whenever I took deeper inspiration. I was also feverish and on several nights suffered from violent shaking chills. This, then, was my state of health when I commenced my climatic treatment in the San Gabriel Valley in Southern California.

At first my improvement was very slow indeed, and was not perceptible until I took to daily horseback riding. In the selection of my horse I thought at the time I was most unfortunate, for I had been impressed more by his general appearance than his gentleness. The result was that I found myself the possessor of a California broncho, possessing all of the typical traits of that much abused animal. On the first occasion it took four men to hold the animal upon my mounting into his saddle. My mother seeing me, looked askance, and as for the guests, every one said it was suicide; but I was indifferent, and that is the probable reason why I did not fare worse. Being killed by a horse did not seem half so bad to me as dying of consumption. The first day I rode my prancing steed scarce an eighth of a mile, but I persevered, and in three months time, when I made a change further inland to Arrow Head, situated in a sheltered nook in the San Bernardino Mountains, I never rode less than ten, and on many occasions twenty miles, and even more, daily, always, however, experiencing severe pains in my side and becoming short of breath when the exercise was at all violent.

At Arrow Head, which was an ideal retreat in every sense of the word, I experienced a setback, all of my rather severe symptoms returning, if anything in a more aggravated form than before. I cannot exactly account for the change, but old timers, who had cured themselves of the disease, told me it was always so, that

the crisis had been reached and that a favorable change would ensue. The turn for the better being delayed, I deliberated for a long time upon the advisability of returning East, but when the day for doing so arrived, I felt a little improved, and deferred my trip. Now I want to digress here for a moment, gentlemen, and state that the old Californians were right in what they said, and that on a great many occasions I have beheld the turning point of a tuberculosis ushered in with aggravated symptoms, which for the time being causes patients to imagine that they are worse. Many an unfortunate has made the mistake of his life in abandoning a climatic treatment at this most critical time and subsequently paid the penalty of his folly. I, for one, never fail to remind my patients of this likelihood when I send them to a distant clime. At Arrow Head I led an out-door life, riding in the morning, exploring the adjacent canyons in the afternoon, and visiting each day the ranch of the late Governor Watterman, where I ate from three to five pounds of grapes each day as long as any remained upon the vines. There are those of you, of course, who ridicule the grape cure, on account of the small amount of nutriment in the grapes, but let me again express to you my firm conviction, not only in tuberculosis, but in other affections, grapes are a most valuable adjuvent to the other forms of treatment. They are relatively rich in potassium, and that, you know, is a powerful reconstructive and alterative. Grapes are also soothing to the throat —in fact they are a pleasant demulcent.

My intractable cough, which clung to me tenaciously, I treated first by never giving away to an impulse to cough unless I was compelled to do so. I remember that often the tears coursed down my cheeks while attempting to suppress the same. I made much headway, however, by cultivating the tolerance of the tickling sensation in my throat. Sometimes I did not succeed in warding off a severe paroxysm of coughing; I nevertheless spared myself much inconvenience in employing this procedure. Sometimes to aid me I would resort to gum arabic or rock candy, which I would allow to slowly dissolve in my mouth. Flesh I gained very slowly, but I increased my weight by forcing myself to eat. I never ate less than a certain quantity of food at each meal, and tried each time to eat more. I ate considerable meat, took lots of honey, drank milk whenever I could obtain it, ate all cereals placed before me, and now and then took a little beer, stout or brandy, but of the latter always with considerable circumspection. I am now

sure that I could have gotten along very well without stimulants of any sort.

Reasoning that if it was good to be out of doors the greater part of the day, it was still better to be out for the entire twenty-four hours, I conceived the idea of making a trip by wagon into the very heart of the desert, where I knew the air was absolutely pure. Unfolding my plans to three other invalids, it was not a long while when I found myself seated upon a large covered four-horse wagon, making my way with my associates across the Canyon Pass into Death Valley and the Lava Beds, determined there to journey until I was fully restored to my health. At first we pitched a tent each night when we had completed the necessary miles constituting a day's travel, but as time went on, packing and unpacking the canvas and driving and clearing stakes became irksome in the extreme, and we abandoned our tent, and wrapping ourselves in our blankets slept upon the bare ground. At this time I was comparatively well, although the process in my lungs was still active, as was evident to myself by the crackling râles, both large and small, which I could produce at pleasure by resorting to violent exercise, such as running, wielding an ax, or lifting heavy weights, et cetera. Until we reached the Needles the weather was fairly good, but upon crossing the Colorado a decided change in temperature took place. It became windy and intensely cold. As we progressed further inland, we were subject to sand storms and blizzards, which delayed our progress and caused us to again resort to the tent. But the tent was small, and becoming an obstacle to the wind, sooner than go through the trouble of erecting it every day, we abandoned it altogether, protecting ourselves as best we could from the falling rain and the snow, which, though heavy, fortunately never lay long upon the soggy ground. Notwithstanding the wind, rain and snow my health improved almost daily, and my resisting power increased perceptibly. The horses becoming run down by their uninterrupted arduous work, we lightened their burdens, all but the one driving walking. The walking did me an immense amount of good, and I later figured that of the twelve hundred miles journey by wagon in the desert, I must have walked not less than eight hundred. Reaching Ash Forks, we went into the Mugallon Mountains, deeply covered at that time with snow. The thermometer was below zero each night, but, cold as it was, we did not suffer. In fact, it was more comfortable than the desert with its

sand and winds. When they were available, we spread pine boughs upon the snow and over them our blankets. The rarity of the air and the ozone from the huge pines changed the character of my expectoration. At first there was an increased amount, but notwithstanding my lungs felt freer than ever before. It was really remarkable how the air stimulated my bronchial secretions —from a thick yellow inspissated sputa the expectoration was converted into a watery mucoid frothy matter, which, though copious, was healthy in appearance, even to a layman. After spending a month in the Mugallons we journeyed into the Tonto Basin, where I had opportunities to resort to a healthful procedure which I had abandoned in the mountains, namely, cold ablution of the body, and which I have practiced daily ever since. When we reached the plains, after again crossing the Pinal Range, where there was less snow than in the Mugallons, the season had so far advanced that the desert had become a veritable cauldron. But I was toughened and stood the one hundred and thirty or forty degrees better than the others, and in addition I walked with a firm and elastic tread, a little thinner than when I left Arrow Head but effectually cured of my disease.

That, gentlemen, is the brief history of the first year of the treatment of my affection. I was well then, but I wanted to stay well, and so after returning home for a few months to my mother's farm in the hills of Maryland, I revisited California and Arizona— repeating the procedure for a third time a year later. Subsequently I went to Jefferson College, where the close confinement in the at that time rickety and illy ventilated building made me sick and again almost laid me out.

I did not give up the study of medicine, however, but resuming my work at a local school, I managed to obtain my degree and simultaneously to keep well by driving twenty miles every day, rain or shine. From the medical school I went to the Garfield Hospital, remaining there a year and a half, and from thence to Vienna, where I managed to attend the clinics for nearly four years, alternating my work with long walks into the Wiener Waldt and excursions during the summer into the higher mountainous regions of the Eastern and Western Alps. My cure I attribute to the cultivation of the power of resistance, to the sunlight and the open-air life I have been and am still leading.

WHAT THE WORLD OWES TO VACCINATION.*

By J. F. MARCHAND, M. D., Health Officer, Canton, Ohio.

The discovery of vaccination by Jenner, and the test which it has stood for one hundred years, is to me the greatest discovery ever made for the benefit of the human race; inasmuch as his discovery was the result of induction rather than discoveries now made in the medical profession by means of deduction.

Vaccination was not a discovery, nor an invention, but it was more. In the language of Mr. John Simon, it was—"A matchless piece of induction."

Nay, it was even more than human power or possibility at this time. In the providence of God, great measures and great men are co-incident; and if Jenner is to be rightly placed in the category of the world's heroes to-day, I would place him high up, over all, upon the pinnacle of fame in the world's gallery of illustrious men; because he had brought light out of darkness and sunshine out of chaos, in the work of his early life in saving human life and preventing pestilential disease.

Widely contrasted in greatness is this hero from those whom the world worships to-day.

Other heroes have slain their thousands and tens of thousands by the dreadful implements of warfare devised by the ingenuity of men, in the different periods of the world's history; but he has saved from terrible death millions in every land; and his life's work has brought peace and happiness to all people, and is still going on throughout the entire world.

The various agencies and methods which enabled Jenner to reach his conclusions and publish his theories regarding all that he claimed for vaccination, now seem rather accidental or providential, than logical conclusions. It is an old adage that "knowledge is power." But he did not possess even this, regarding the nature of contagious and infectious diseases. Under such circumstances, with no knowledge or conception of the germ theory, it is really to be wondered how so great, lasting and beneficial a discovery could have been made. Too long had the world measured greatness by the outgeneraling and outmarshaling in force of arms.

*Read at the meeting of the State and Local Boards of Health of Ohio, January 26, 1900.—From Ohio Sanitary Bulletin.

The price of heroism was paid by human blood. The victor's crown was worn by men scarcely raised above the brute creation.

The disaster of wars was not equal to the deaths from smallpox. The ravages from this disease alone were so alarming that the entire population of cities and countries everywhere was threatened with annihilation.

The discovery of vaccination and its practice called the first halt upon smallpox; and its potency to-day is the only safeguard that we have in preventing smallpox.

The success of vaccination, as enunciated by Jenner, formed a nucleus for the medical profession to begin operations in preventive medicine. Its discovery alone did more than any other one thing for sanitary science. It concentrated medical thought upon the true nature of contagion. It broadened the medical horizon at a new epoch in the world's history. It helped to lift medicine out of empiricism. It started a new sanitary science. It furnished material for subsequent work in the evolution of boards of health. It proved to the world that disease can be prevented, or, at best, modified. It demonstrated higher ideals for the human family than conquest of men and lands. It proved conclusively that Providence was not guilty of that for which He was charged, in visitations of death and disaster by this enemy of mankind. It placed within human hands methods and means for the obliteration of smallpox. It has made the history of the disease which for more than two thousand years nothing could be done whatever, a disease entirely within control and modification. It has removed a scourge from the face of the earth. And by so doing I am not too prophetical in predicting that the other scourges which menace the race await similar solutions at our hands.

The history of smallpox prior to Jenner's discovery makes a sad and gloomy picture. The completeness or incompleteness of its history up to this time is the most terrible record of disease of which we have any knowledge. It has been estimated by historians that during the century preceding vaccination fifty millions of people in Europe alone died of smallpox. Contrast this record with the record of an hundred years after its use. This number of deaths in one century about equaled our entire population in the United States in an almost equal period of time from the Declaration of Independence.

Under such existing conditions it has been said that "the hu-

man race was beaten down until men became resigned to the disease." "There is no contagion so strong and sure as smallpox;" and, in the language of Watson, "none that operates at so great a distance."

The value of vaccination as a means for the limitation of smallpox, soon after its discovery, was recognized by the governments of Europe, and its introduction among the people was rapidly made by the crowned heads.

Spain at that time held possessions in different parts of the Old and New World, and sent expeditions with surgeons and vaccine virus on a long cruise encircling the globe, covering a period of three years.

The possibilities which vaccination offered so greatly influenced the world that at a very early date compulsory vaccination was established in Bavaria in 1807, Denmark in 1810, Sweden in 1814, Wurtemberg, Hesse and other German states in 1818, Prussia in 1835, Roumania in 1874, Hungary in 1876, and Servia in 1881.

A brief history of smallpox, and the awful ravages and mortality records which it has left in its prevalence in the early history of the human family, cannot fail to impress the student of history in the widely contrasted conditions which then existed and those which now exist.

Smallpox, no doubt, is as old as the advent of man.

Beginning in the Orient, records establish its prevalence as early as 1122 B. C. India and China and other Asiatic countries long before the birth of Christ suffered from this disease and have left substantial records of its fatality.

The Greeks and Romans experienced its fatal blow, and it is now believed that Athens, B. C. 430-25, trembled under the destroying power of this disease generally termed the plague. The exodus of peoples from one country to another spread the disease until Europe and America received the disease, as man's migration carried it in the progress of adventure, discovery and civilization.

Smallpox is as deadly a foe to-day to the human family as it was when Rhazes, a physician of Bagdad, wrote his famous work in the early part of the tenth century.

It appeared in Rome A. D. 160; China, A. D. 200; Pelusium, A. D. 544. It spread over Egypt and Syria and the rest of Asia Minor.

Gregory of Tours records the appearance of an epidemic in the

countries of Southern Europe, bordering on the Mediterranean Sea. During the Crusades Europe suffered greatly by reason of the importation of smallpox brought from foreign lands. This disease assumed grave dimensions. Just as travel, commercial and social intercourse increased among the people. The terrible border wars, fought hand to hand in those early days, also perpetuated the disease and annually swept away hundreds of thousands of people in epidemics. Wars then, as now, destroyed an alarmingly large number by disease.

Smallpox entered England in 1241-42, Iceland in 1306, and Sweden and Germany toward the end of the fifteenth century. It was not long finding an introduction into the western hemisphere, as voyages of discovery, headed by intrepid navigators, dared the dangers of unknown seas.

It reached the West Indies in 1507, annihilating entire tribes of savages.

Mexico did not escape. In 1527 it swept away millions of victims there; and, in the language of Prescott in his history of Mexico—

"Smallpox swept over the land like fire over prairies, smiting down prince and peasant, and adding another to the long train of woes that followed the march of the white man. It swept down toward the Pacific, leaving its path strewn with the dead bodies of the natives, who, in the strong language of a contemporary, perished in heaps like cattle stricken with murrain."

So dreadful was smallpox in England that the history of the British kingdom is not complete without some reference to its effect upon the people. Macaulay says: "That disease over which science has since achieved a succession of glorious and beneficent victories, was then the most terrible of all ministers of death."

The havoc of the plague had been far more rapid; but the plague had visited our shores only once or twice within living memory; and smallpox was always present, filling our churchyards with corpses, tormenting with constant fears all whom it had not yet stricken, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to the lover.

So dreadful was the scourge of smallpox in Europe, and so ineffective were all methods of treatment, that the population was so decimated that it was considered a plague from which the king

and peasant suffered alike and fell victims to the destroying power of its virulence.

The profession of medicine at this time knew nothing of the real nature of the disease, except its contagion, and were powerless to save even themselves. Before the discovery and introduction even of inoculation, the outlook was gloomy and threatening to the human family. Inoculation of smallpox wrought the first change in staying the disease and contributed to the elucidation of Jenner's discovery of vaccination.

The inoculation of smallpox into one healthy and not exposed to the true nature of the disease, served a purpose only in the time of its discovery, or rather introduction into Europe. The great objection to its use was the propagation of the real disease, smallpox, which made it possible for others to contract. Whilst those inoculated were rendered immune from smallpox, great danger existed in its transmission to others. Upon the discovery of vaccination in 1796, inoculation fell into disuse, and was abolished by England in 1841 as tending to propagate smallpox.

Epidemics of smallpox, as they now occur, modified in their magnitude and limited in their area, are just as dangerous to the community as in the days before Jenner. For this reason vaccination and revaccination furnish our only method of stamping out the most pestilential disease which knows no clime nor race of men.

Since vaccination does not in every case prevent smallpox, although mild in form, and since deaths do result from smallpox in the vaccinated, sometimes, there have always been, and are to-day, I am sorry to say, people who oppose vaccination for no other or better reason than to differ from the best medical and sanitary thought of the century just ended.

Isolated cases are cited by our anti-vaccinationist friends in proof of their position, rather than a fair consideration given in a large number of cases previously vaccinated.

What does the world owe to vaccination?

What does the world owe to anything? I might ask.

There must be some merit if the world is better for anything done by man. Only a few historical figures stand out in the world's history as having benefited the entire world. There has never been a unanimous verdict in favor of any one great thing which benefited the whole round world. Disbelief and doubt will always obstruct beneficent measures. The progress of the human

family is the result of æons in the evolution of thought by means of education.

So that it is not strange that our work as sanitarians is questioned in its final purpose in our efforts to prevent disease. Figures, statistics and results have not entirely brought conviction; even death itself will not produce the *quod erat demonstrandum.*

Strange as it may seem, nevertheless it is true, that the death of the Son of Man on the cross for the whole world is not yet believed by all men. I speak reverentially. The doubting "Thomases" go up and down this old world, flaunting sneer and insult into the fair face of our goddess Hygeia. Enemies of sanitation are not entirely without the ranks of the medical profession. The laity are not the only class wherein we find sanitary obstructionists and the enemies of God and man.

Some doctors, ignorant of some things and learned in others, often hold up boards of health and health officers, or try to, when their influence should be with them and not against them, in all questions and matters which have for their common end the best interests of the community and the health of the people.

The only solution for this phase of sanitary work, in my humble opinion, is education and organization through a long period of time with unceasing effort. Education first, and then legislation, furnish means for final triumph. The arch-king which we have to fight is ignorance, and until knowledge and conviction are once gained, the work of all of us will meet with strenuous opposition. But we must not falter nor fail. A sacred trust is committed to our care, and the consciousness we have in knowing that we have done our duty honestly and well will atone for all arduous and annoying labor.

It has not been my purpose in the preparation of this paper to burden you with statistics, which are always dry, but I must ask your indulgence in a few quotations to prove to you what the world owes to vaccination:

"M. Bousquet, in his detail of the epidemic which prevailed at Marseilles in 1825, states that the whole population was estimated at 40,000. Of these, 30,000 had been vaccinated, 2,000 had had the smallpox, 8,000 had neither been vaccinated nor had smallpox. Of the 30,000 vaccinated, 2,000 were seized with smallpox, twenty of whom, or one for every hundred affected, died. Of the 2,000 who before had smallpox, either naturally or by inoculation, twenty were attacked, and of these four died, or one for every

four who took the disease. Of the 8,000 who had not been vaccinated nor had smallpox, 4,000 contracted it and 1,000 died, or one in every four. By this it appears that one-half of the non-vaccinated, one-fifteenth of the vaccinated, and one-hundredth of the variolated took the disease. But such was the difference in the comparative mortality of the attack in the vaccinated and the variolated that, while the variolated part of the population were cut off in the proportion of one out of every 500, the vaccinated lost only one out of every 1,500; or, in other words, of an equal number of variolated and vaccinated cases, three of the variolated died from the second attack for every one that died who had been previously vaccinated.

"In Berlin, in the year 1872, the mortality of the disease was 243 per 100,000 population, and the year after it was 262. Thereupon vaccination during the first year of life and revaccination at the age of twelve years was made compulsory by law, and with the effect that in the year 1875 the death rate was lowered to 36 per 100,000 inhabitants; the next year it was lowered to 31, the next to 3, and so through later years with an average annual mortality of 1.7 per 100,000 people. During the year 1890 only fifty-eight cases occurred in the whole German empire, or 1.18 cases to each 1,000,000 of population.

"A village in Leicestershire, England, of 1,300 inhabitants, was visited by the pestilence in 1872. All but two of the inhabitants were efficiently vaccinated and escaped the disease, whereas the two unvaccinated persons died of it.

"The late Dr. J. H. Rauch, for many years secretary of the State Board of Health of Illinois, has shown that in the Illinois epidemic of 1881-83 the mortality rate of the vaccinated was approximately 6 per cent., and of the unvaccinated it was 49 per cent.

"Corbally has demonstrated that in the Sheffield, England, epidemic of 1887-88 vaccinated children were, as compared with the unvaccinated, twenty times less liable to attack from smallpox, and twenty-four times less liable to die when attacked. That is to say, the vaccinated children had, as compared with the unvaccinated, four hundred and eighty fold security against death from smallpox.*

"In the Halifax, England, epidemic of 1892-93 the death rate from smallpox among vaccinated persons was 1.8 per cent., and among the unvaccinated it was nearly 41 per cent. No case oc-

*Sanitarian, Vol. 27, p. 466.

curred in a vaccinated child under five years of age, and in the Leicester epidemic of 1893 no case occurred in a vaccinated child under ten years of age.

"From the records of 5,000 cases treated in the Municipal Hospital of Philadelphia, according to Dr. W. H. Welch in the 'New York Medical Journal,' March, 1894, it appears that the death rate in that institution in post vaccinal cases, and in all in which there had been an attempt at vaccination were included, was 16.26 per cent., and the death rate in non-vaccinal cases was 58.38 per cent.

"Seventy-three per cent. of the cases in unvaccinated infants under one year of age ended in death, and no fatal case occurred among vaccinated infants of the same age. Between the ages of one and seven years the mortality of post vaccinal cases was 5.7 per cent., and of non-vaccinal cases it was 51.48 per cent.

"Dr. Benj. Lee, of Philadelphia, Pa., in his report to the Pennsylvania State Medical Society, 1875, shows that the mortality from smallpox in the epidemic then just ceased was 55.9 per cent. in the unvaccinated; in the vaccinated with one vaccinal scar it was 15.2 per cent., while the mortality among those having five or more scars was 5.5 per cent.

"During 1875 the mortality among 1,866 vaccinated persons treated in the Riverside Hospital, New York City, was 375, while among the 405 patients who had never been vaccinated, 200 died." (Eugene Foster, M. D., in "American Medical Association Journal.")

I quote from the American Text Book of the Theory and Practice of Medicine, Vol. 1st, pages 288-89:

"In Sweden the mortality from smallpox in the twenty-four years before the introduction of vaccination, was 2,050 per one million annually; after vaccination, 158 per one million.

"Drysdale says of Berlin, that the mortality of that city during the epidemic of 1872-73, rose to 243 and 262, respectively, per one hundred thousand inhabitants."

Thereupon vaccination in the first year of life was made compulsory, and revaccination in the twelfth year of life, with the result that in the first year of enforcement (1875) the mortality fell to 3.6 per 100,000; 3.1 in the year 1876, to 3.0 in 1877, and so on for succeeding years down to 1883 with an average of 1.7 per 100,000.

The nearly absolute protection of vaccination is shown again

by comparing the cities in which vaccination and revaccination are obligatory and optional. Thus, according to the recent reports of the Berlin health office, the mortality of smallpox per 100,000 inhabitants in 1888 was, in Dresden, 0; in Berlin, .07; in London, .6; in Munich, .75; in Hamburg, 3.58; in Paris, 9; in St. Petersburg, 15.3; in Vienna, 26.15; in Prague, 55.49.

Army statistics are specially valuable from their accuracy. Schultze shows that since the operation of the German law, the annual average cases of smallpox per 100,000 were, in the army of Germany, 4.94; of France, 169.72; of Austria, 374.

During the Franco-German war (1870-71) the mortality of smallpox in the unvaccinated French army was 23,469, while that of the vaccinated German army was but 261.

The degree of protection independent of revaccination is determined to a considerable extent by the success of the operation and by the quality of matter introduced. Thus, according to Marson, the average mortality of smallpox among all vaccinated persons is 5.24 per cent., while that of individuals showing perfect cicatrices is .5 per cent.

I also quote from "Cyclopædia of Diseases of Children," Vol. 5, Keating, by Dr. William A. Edwards, pages 264-65:

"Blyth concludes from a study of statistics that the mortality of all ages in a vaccinated community will be 5 per cent., while in an unvaccinated community it will be 49 per cent. A striking example of the effects of vaccination on the mortality of smallpox is furnished by the record of deaths from smallpox at Madras, India, as shown in a paper by Sir William Moore.

"The average mortality from smallpox at Madras from 1871 to 1884 was 1,457. In 1883 vaccination was made compulsory in Madras, and during the years 1885 and 1890 the mortality from smallpox was 35. The gradual stamping out of smallpox in Bavaria by vaccination is well shown by Böhm. Previous to the passage of the vaccination law, in 1874, the average mortality from smallpox for 16 years had been 17.5 per 100,000; while since that time it has been .58. But this figure represents simply the average for the 18 years, the per cent. of mortality being much less than this; thus, in 1890, .1; in 1891, .7; in 1892, .05; it has not reached 1 per 100,000 since 1882."

These are a few figures taken from reliable sources which must have some influence in proving the benefits derived from vaccination.

These statistics are gathered from the writings of well known and eminent physicians, who have nothing to gain from such glorious proofs of the power of vaccination, save the benefits which the medical profession have been able to give to the entire world.

The general distribution of tuberculosis and its fatal effect upon the human family, at this time, is taxing the keenest and brightest intellects, in trying to discover some measures which will limit its spread or produce a cure of the disease.

Tuberculosis was ably discussed in this city (Columbus, Ohio,) last June, at the meeting of the American Medical Association, by our honored president, Joseph Matthews, M. D., LL.D., in his opening address to the Association, and he voiced the sentiment of the medical world, in language too eloquent, and in diction too strong, for me to do other at this time than wish all here assembled could have heard him.

We have reason to be alarmed at the death rate throughout the world from tuberculosis, and since we have, I wish to call attention to late discoveries made in cases of tuberculosis following smallpox.

It was Laudowzy, in his paper before the Congress of Tuberculosis, in 1888, who pleaded for compulsory vaccination as an aid to eradicate the tuberculosis predisposition. Lop, in 1899, endorsed his discovery.

"Lop has followed up the study of this subject by investigating 140 cases of smallpox victims who sooner or later became tuberculous. Of this number 64 were personal cases, 54 were studied by Revilliod, of Geneva, and the remainder were collected by Chauvain (These de Paris, 1897), from the clinic of Professor Laudowzy.

"To those who would deny in advance the significance of these figures, Lop states that his 64 cases were all collected within less than a year. He has, besides, the verbal declaration of a number of prominent hospital physicians that the apparent casual relationship between the two diseases is not due to co-incidence. With regard to the part played by heredity, Lop found evidence of this nature in but seven of his personal cases. The personal antecedents were equally negative. Thirty-seven of the patients were hard working laboring people, probably poorly nourished and somewhat alcoholic, but there was no evidence of any specific predisposition aside from the fact that they had variola. The

other 27 personal cases were people who were well situated socially.

"Of Revilliod's patients (54), only 4 showed a history of parental tuberculosis, and 7 had collateral ascendants or near relatives who were tubercular. The personal history was completely negative.

"In Chauvain's (22) cases, but two had any family history whatever of tuberculosis. Hence of 140 cases only 20 exhibited any evidences at all of heredity. With regard to the duration of the interval between the time of the occurrence of the two diseases, late infection appears to be the rule. Of Lop's cases (64), 16 developed tuberculosis within four years after the attack of smallpox; 38 developed the disease within the first decade, and 26 within the second decade after the early infection.

"Revilliod's observations extend over a period of forty years. Of his material, 18 cases did not become tuberculous until between 25 and 40 years after the variolous infection. Chauvain's figures are even more strongly suggestive of late infection.

"These figures by themselves would not, perhaps, signify very much, because they are not only small, but they attack the problem from one side only. Laudowzy, however, studied the question from another point of view by following up 300 cases of variola; and the astonishing result of his studies was that not more than 3 per cent. of this number escaped tuberculosis in the long run. The weight of evidence, then, is in favor of late infection of the variolous by tubercle, from 10 to 30 years after being about the average. When the debut is early, the tuberculosis is usually of the galloping type. The more intense the variola, the more likely is the patient to contract tuberculosis at an early date.

"It is thus easy to see how variola is able to assist in the diffusion and maintenance of tuberculosis, and further, that it is even more relentless and malignant than has been imagined, since it slowly exterminates its original survivors in after years by the aid of another great scourge. The lesson of the need of compulsory vaccination needs to be told anew." ("Journal of Tuberculosis," July, 1899.)

The value which vaccination has been, and is, to the world, aside from the considerations given, is of immense benefit commercially. Vaccination has made it possible for uninterrupted commercial relations between all nations. Commerce has been fostered and made permanent upon the seas. Foreign countries are kept con-

stantly in touch with each other. Diverse relations with all nations have not suffered by reason of smallpox epidemics.

Unlike many other pestilential diseases, smallpox is in every clime and selects its victims from every color and race of men. It takes in the entire world, and since it does, vaccination is a benefit to the whole world. The whole world has been benefited by vaccination, inasmuch as it has prevented any hindrance or obstruction to emigration or immigration. Vaccination stamps out the importation of smallpox from foreign lands.

When great international difficulties cannot be settled in any other way than by arms and war, vaccination preserves whole armies from smallpox, notwithstanding whatever opposition there may be to vaccination. The civilized nations of the earth to-day vaccinate all soldiers in active service. As a nation, we owe an everlasting debt of gratitude to Jenner and his discovery. It enabled us in less than one hundred years to become the greatest nation upon the face of the earth. It kept out smallpox when there was every chance for its introduction among us in the large numbers of people seeking homes in the New World. It has been practiced so generally among our people of composite blood and nationalities, that we owe the building and structure of our nation uninterruptedly largely to the benefits of vaccination.

Vaccination has been well fostered here, and if not as well as it should have been, our republic will eventually regard it absolutely necessary for all our citizens to be rendered immune against so deadly a disease; or, if not entirely immune, the disease will be amenable to treatment, with a low mortality.

We will carry the glad tidings of life and health to our new possessions in the distant Pacific. The downtrodden people of those pest-stricken islands, Hawaii and the Philippines, will come in for their share of protection against smallpox. Cuba and Puerto Rico, freed from Spanish misrule and modernized barbarism, will enjoy an increased population by reason of the virtue of vaccination.

Mr. President, we should take courage in the work which our Board of Health is doing in Ohio. The position which this board occupies to-day has been gained after a long, hard struggle. But it is only our tenth annual meeting. Here let us dedicate ourselves anew to the work which each one of us has to do. Sanitary work is a growth, and its formation in this country is only started.

Before closing this paper, permit me to quote the words of the

illustrious and now glorified Dr. William Pepper, President of the Pan-American Medical Congress at Washington, 1893:

"The history of European medicine for more than one hundred years is a record of which we may well be proud, when the enormous obstacles to progress are held in view. It is not necessary to remind this audience of a single one of its great triumphs. Vesalius and Parè, Harvey and Sydenham, connect themselves with Bichat and Lænnec, and Hunter and Jenner, and Pasteur and Lister, and Virchow and Koch, and the torch of genius is passed down the line of these immortals and lights up the ages with the splendor of their achievements. But it is sad to reflect upon what has been done as contrasted with what might have been.

"The dense ignorance of rulers and masses on scientific questions, the slow progress of sound, useful education among the people, the huge claims of imperialism and militarism, the wanton waste of luxury, have retarded research, have left but paltry sums available for the diffusion of knowledge, have hindered the embodiment of legislation, and in actuality of much that would help the healing of the nations. It is an odd commentary on the vaunted civilization of to-day to contrast the sums doled out by the most enlightened governments of Europe for the promotion of education and original research, or for the suppression of preventable diseases, with those lavished on the vast hosts of armed men and the huge fleets of unwieldy, armored ships, deemed necessary for the maintenance of peace and order."

In the language of Bowditch, in his address at the Medical Congress in Philadelphia, in 1876: "Our present duty is organization—national, state, municipal and village."

With the bubonic plague threatening us at present by importation, it behooves us to exercise renewed energy in our efforts in preventive medicine.

The unselfish motives of the profession which I represent cannot fail to meet your approval and endorsement. For purposes mercenary, the medical profession would not be expected to labor in this great field of prevention of disease; but each member is a warrior, and, if needs be, a martyr, to the plague's fatality. There will be no recession in our ranks until the secret of man's enemy, disease, is extracted and known.

The day is only dawning; and we see only the first streaks of light from "rosy fingered dawn." The achievements in medicine and sanitary science have been so wonderful that I am not too

Utopian in predicting still greater discoveries. We have yet to attain unto greater things.

"The unattained! stupendous word!
What visions in its face we see;
And in its syllables are heard
What whisperings from futurity.

"It points us to a golden day,
Wherein man shall so comprehend
Great Nature's laws—and so obey,
That all disease shall have an end;

"A day when time, exempt from fears,
Shall sit so lightly on the brow,
That man shall round an hundred years,
As gracefully as sixty now.

"Perchance he may on earth remain
So long as he shall choose to stay,
Then take some through aerial train,
And, like Elijah, whirl away.

" 'Tis coming; yes, we dare to hope,
Though doubt doth every point beset.
The culture tube and microscope
Will solve the mighty problem yet.

" 'Tis coming—the protecting light
Of higher knowledge yet to be,
As sure as stars come out at night,
Or rivers reach the roaring sea.

" 'Tis coming! expectation thrills
At thought of triumphs pressing on!
See! even now the eastern hills
Are bannered with the flags of dawn!"

NEW YORK'S NEW QUARANTINE LAW.

AN ACT to amend the public health law, in relation to quarantine at the port of New York, and the health officer of the port of New York. Became a law, April 2, 1900, with the approval of the Governor. Passed, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Articles six and seven of chapter six hundred and sixty-one of the laws of eighteen hundred and ninety-three, entitled "An act in relation to the public health, constituting chapter twenty-five of the general laws," as amended by chapter four hundred and sixty-five of the laws of eighteen hundred and ninety-six, are hereby amended to read as follows:

ARTICLE IV.

QUARANTINE AT THE PORT OF NEW YORK.

Section 80. Quarantine commissioners; organization.
81. Other officers and employes.
82. Meetings; report.
83. Custody of quarantine establishment.
84. Quarantine established.
85. Docks and wharves.
86. Anchorage.
87. Boarding station.
88. The West Bank hospital.
89. Crematory.
90. Remains of persons cremated.
91. Burying ground.

Sec. 80. QUARANTINE COMMISSIONERS; ORGANIZATION—There shall continue to be a board of commissioners of quarantine at the port of New York consisting of three members appointed by the governor by and with the advice and consent of the senate. Each shall be a resident of the county of New York, Kings and Richmond, and shall hold office for three years and receive an annual salary of twenty-five hundred dollars. The board shall elect one of their number president, who shall hold office during the pleasure of the board, but not after he shall cease to be commissioner. The president shall appoint a secretary of the board who shall hold office during the pleasure of the president and receive an annual salary of eighteen hundred dollars to be paid by the state.

Sec. 81. OTHER OFFICERS AND EMPLOYES—The board shall appoint the following officers who shall receive the following annual salaries to be paid by the state: A superintendent of the Swinburne hospital, twenty-five hundred dollars.

A superintendent of Hoffman island, fifteen hundred dollars. An engineer at Swinburne island, eleven hundred and fifty dollars. An engineer at Hoffman island, ten hundred and fifty dollars. A carpenter at Swinburne island, nine hundred dollars. Two laborers at Swinburne island, sixty dollars per month. Two laborers at Hoffman island, sixty dollars per month, and such other employes as emergency may require.

Sec. 82. MEETINGS; REPORT—The commissioners shall hold daily meetings, Sundays and holidays excepted, from May first until November first in each year, and as often in the other months as they may deem necessary. They shall annually report to the legislature at its opening a report of their proceedings and the condition of the quarantine establishment.

Sec. 83. CUSTODY OF QUARANTINE ESTABLISHMENT—The commissioners of quarantine shall be the custodians of the quarantine establishment to be held by them in trust for the people of the state, in accordance with the provisions of this chapter. They may make such rules and regulations not inconsistent with law as they shall deem necessary for the care and protection of each portion of the quarantine establishment; for the government of the employes therein; for the regulation of the conduct of all quarantinable persons provided the same do not interfere with the duties of the health officer. They shall pay all salaries of persons appointed by them from money appropriated by the state. They shall collect from the owners, agents or consignees of vessels all bills for the care and maintenance of persons detained in quarantine, and shall have power to enforce such payment by process of law against the vessel upon which such detained persons have arrived, or against the agents, or owners, or consignees of such vessels, and, in case of an emergency arising, the quarantine commissioners shall, upon the certificate of the health officer that such an emergency really exists, use all means conducive to the protection of the public health, except, when such emergency calls for the expenditure of money beyond such amount as may be in the hands of the commissioners, when such expenditure may be made only by and with the approval of the attorney general and comptroller.

Sec. 84. QUARANTINE ESTABLISHMENT—Quarantine for the protection of public health shall be maintained in and for the ports of New York, for all vessels arriving thereat from other ports, and for the crews, passengers, equipage, cargoes and other property on board the same. The quarantine establishment at such port shall consist of:

1. Docks and wharves.
2. Anchorage for vessels.
3. Stationary hospital.
4. Boarding station.
5. Crematory.
6. Residence for officers and men.

7. Such other places and structures as have been or may be authorized by law for quarantine purposes.

Sec. 85. DOCKS AND WHARVES—The existing docks and wharves with their appurtenances shall be maintained, and if any such additional structures are required, they shall be constructed at such expense and in such place in the lower bay of New York, as the quarantine commissioners and health officer may determine, with the approval of the commissioners of the land office.

Sec. 86. ANCHORAGE—The anchorage for vessels under quarantine shall be within the waters of New York harbor at such place as may be designated by the health officer and commissioners of quarantine.

Sec. 87. BOARDING STATION—The boarding station for vessels from any place where disease subject to quarantine existed at the time of their departure, or which shall have stopped at any such place during their voyage, or on board of which during the voyage any case of such disease shall have occurred, arriving between the first day of April and the first day of November, shall be at such place as the health officer and quarantine commissioners may designate. And all such vessels immediately on their arrival shall anchor where directed and there remain with all persons arriving thereon until discharged by the health officer.

Sec. 88. THE SWINBURNE ISLAND HOSPITAL—The Swinburne Island hospital in the lower bay of New York, with its docks, wharves and appurtenances shall be kept in the best possible condition by the commissioners of quarantine and be in constant readiness for use as a hospital for the reception of persons sick with infectious diseases, arriving in quarantinable vessels, and shall be provided with all necessary furniture, fixtures and other facilities for the care of the sick, and for the prompt and efficient discharge of the duties of the health officer. The expense of the care and the support of every person received into such hospital shall be fixed and determined by the commissioners of quarantine, and shall be paid to the commissioners of quarantine by the master, owner or consignee of the vessel in which such person shall have arrived, and the payment thereof may be enforced by the same remedies as the payment of other quarantine charges. The structures on Hoffman Island now used for that purpose shall continue to be used for the reception and temporary detention of persons under quarantine who have been exposed to infectious diseases and who may be sent there by the health officer pursuant to law. And the commissioners of quarantine shall use every effort to maintain this island and the buildings thereon in the best possible condition for the safe and comfortable occupancy of detained persons, and shall provide such appliances for the cleansing and the disinfection of persons, baggage and other goods as the health officer may require.

Sec. 89. CREMATORY—The board of commissioners of quarantine shall maintain upon Swinburne Island, in the harbor of

New York, a crematory of such form and construction as they may deem advisable. The health officer shall cause to be incinerated therein the bodies of persons dying at the quarantine hospital from infectious diseases, except of persons whose religious views as communicated by them while living, or by their friends within twenty-four hours after their decease, are opposed to cremation.

Sec. 90. REMAINS OF PERSONS CREMATED—The remains of persons cremated upon Swinburne Island shall be placed in receptacles provided by the commissioners of quarantine for this purpose, and the same shall be properly labelled for identification; and the said commissioners shall deliver such receptacles to the proper claimants, when such appear, and when no such claimant is known, shall place the receptacle in a proper place to be provided for this purpose.

Sec. 91. BURYING GROUND—The commissioners of quarantine may make use of such parts of Swinburne Island in the harbor of New York as they may find necessary for the interment of the bodies of persons dying at the quarantine hospital from infectious diseases, which are not authorized to be cremated or which may not be designated for cremation.

ARTICLE VII.

THE HEALTH OFFICER OF THE PORT OF NEW YORK.

Section 100. Appointment.
101. Residence and general powers.
102. Appointment of assistants, nurses, boatmen and others employed.
103. Examinations, warrants for offenders.
104. Boarding vessels.
105. Bills of health.
106. Effects of deceased persons.
107. Department of health of the city of New York.
108. Power over master, owner or consignee of vessel.
109. Quarantinable diseases.
110. Quarantinable vessels and periods of quarantine.
111. Detention for examination of vessels.
112. Sanitary measures; admission to pratique.
113. The yellow flag.
114. Vaccination.
115. Duty of pilots.
116. Removal of vessels, persons and things from the city of New York.
117. Payment of expenses of quarantine.
118. Lien for services and expenses.
119. When master of vessel must provide for passenger.
120. Policemen.
121. Confinement of offenders.
122. Jurisdiction over offenses and in actions.

123. Special port warden.
124. Fees and compensation of health officer.
125. Annual report.

Sec. 100. APPOINTMENT—There shall continue to be a health officer for the port of New York appointed by the governor, by and with the advice and consent of the senate, whose term of office shall be four years, and who shall be a doctor of medicine of good standing of at least ten years' experience in the practice of his profession and practically familiar with quarantinable diseases.

Sec. 101. RESIDENCE AND GENERAL POWERS—The health officer for the port of New York shall reside at quarantine. He shall have the general supervision and control of the quarantine establishment, and the care and treatment of the sick thereat, and shall carry into effect the provisions of this article. He shall, in the presence of immediate danger, of which he shall be the judge, take the responsibility of applying such additional measures as may be deemed indispensable for the protection of the public health.

Sec. 102. APPOINTMENT OF ASSISTANTS, NURSES, BOATMEN AND OTHERS EMPLOYED—The health officer may appoint and dismiss at pleasure two deputy health officers and a resident physician of the Swinburne Island hospital, who may perform, subject to his direction, any duty required of the health officer, and for whose conduct he shall be responsible. He may appoint and dismiss at pleasure as many nurses, boatmen and employes of the boarding station as may be necessary for the proper treatment and care of the inmates thereof, and in conjunction with the quarantine commissioners, license such lightermen, stevedores, laborers and other employes necessary for the care and treatment of vessels, merchandise, baggage, dunnage and other property in quarantine. The compensation of all persons employed under this section, unless established by law, shall be fixed by the health officer.

Sec. 103. EXAMINATIONS, WARRANTS FOR OFFENDERS—The health officer may administer oaths in all examinations to be conducted by him, or under his direction, prescribed by this article, and relative to any alleged violation of quarantine law or regulations. He may issue a warrant to any constable or other citizen for the pursuit and arrest of any person violating any quarantine law or regulation, or obstructing the health officer in the performance of his duty, and for the delivery of any person arrested to the health officer, to be detained in quarantine until discharged by him, not exceeding twenty days. Every constable or other citizen to whom any such warrant shall be delivered shall obey the direction thereof.

Sec. 104. BOARDING VESSELS—The health officer shall board every quarantine vessel as soon after her arrival as practicable, between sunrise and sunset; shall ascertain by the inspection of the bill of health, manifest, log book or otherwise, as to the

health of all persons on board, and the condition of the vessel and cargo; shall examine on oath as many persons on board or elsewhere as he may deem expedient to enable him to determine the period of quarantine and the regulations to which the vessel and cargo shall be made subject. It shall be the duty of the health officers at the several ports of entry within the state of New York to require the masters of all merchant ships and vessels arriving at said ports from any foreign port, to present a bill of health, duly executed by the consul, vice-consul, or other consular officer of the United States, or by the medical officer attached to the United States consulate by appointment of the United States government, or the representative of the United States government resident at said port of departure, which shall set forth the sanitary condition of the cargo and of the crew and passengers; also the sanitary condition of the food, water and ventilation of said vessel; the number of cases at such port of yellow fever, plague, cholera, smallpox, typhus fever, relapsing fever, scarlatina, measles, diphtheria and other infectious diseases, the total number of deaths from each of these diseases from all causes the week preceding the date of said bill of health, as far as can be ascertained by the said consul, vice-consul or other consular officer of the United States, or the medical officer attached to such consulate. Said bill of health shall contain, in addition to the above, a statement of any circumstances affecting the public health in relation to infectious diseases at the port of departure, or the community adjacent thereto. Vessels that touch at other ports on the passage shall bring a bill of health from each and every port, or shall have indorsed upon the original bill of health by the consul, vice-consul, consular officer or medical officer of the consulate, the facts and conditions of those ports as to the existence and prevalence of the infectious diseases mentioned in this section. All persons coming from or through any foreign port or place who, after the passage of this act, may arrive at the port of New York, shall be liable to an examination by the health officer or his deputies, as regards their protection from smallpox. In any case any person so arriving shall refuse to submit to such examination, or upon such examination shall be found not sufficiently protected from smallpox, or refuses to be protected by vaccination, such person, and in case such person be a minor, then also the person having him or her under charge, shall be detained in quarantine until he or she shall have passed the incubative period from date of last possible exposure; and the expense of such detention shall be chargeable by the commissioners of quarantine upon the consignees or owners of the vessel having such person on board, and such expenses as may be incurred shall be a lien upon such vessel. The master of a vessel who shall refuse or neglect to comply with the provisions of this section shall be guilty of a misdemeanor, and be punished by a fine of not less than one hundred dollars nor more than five hundred dollars.

Sec. 105. BILLS OF HEALTH—The health officer shall re-

quire the masters of all merchant ships and vessels at such port from any foreign port to present a bill of health, duly executed by the consul, vice-consul or other consular officer of the United States, or by the medical officer attached to the United States consulate, by appointment of the United States government or the representative of the United States government, resident at such port of departure, setting forth the sanitary condition of the vessel, its cargo, crew, passengers, food, waters and ventilation and the sanitary history of the vessel, the number of cases at such port of yellow fever, plague, cholera, smallpox, typhus fever, relapsing fever, scarlatina, measles, diphtheria and other infectious diseases, the total number of deaths from each of these diseases, and from all causes the week preceding the date of the bill of health, as far as can be ascertained by the officer executing such bill of health, and a statement of any circumstances affecting the public health in relation to infectious diseases at such port of departure or the community adjacent thereto. Vessels touching other ports on the passage shall also bring a bill of health from each port, or shall have indorsed on the original bill of health by one of such United States officers thereat, the facts and conditions of the ports touched, as to the existence or prevalence there of any such infectious disease.

Sec. 106. EFFECTS OF DECEASED PERSONS—The health officer shall secure the effects of deceased persons in quarantine from waste and embezzlement, make a true inventory thereof, and if the rightful claimants thereto do not appear within three months deliver the same to the public administrator of the city of New York, unless they ought not to be removed or ought to be destroyed under the provisions of this article.

Sec. 107. DEPARTMENT OF HEALTH OF THE CITY OF NEW YORK—The health officer shall keep the department of health of the city of New York informed of the number of cases of quarantinable diseases and the character of the same held at quarantine and he may receive any vessel or merchandise sent to him by the health authorities of New York which in his opinion is dangerous to the public health.

Sec. 108. POWER OVER MASTER, OWNER OR CONSIGNEE OF VESSEL—If the master, owner or consignee of any quarantinable vessel shall neglect or refuse to do any act or thing lawfully directed to be done by the health officer or to comply with any lawful order or direction of the health officer, or with any regulation relative to such vessel or any person or thing on board thereof, the health officer may employ such assistance as may be necessary to enforce any such order, direction or regulation. The health officer in the lighterage, stevedorage and storage of quarantinable vessels and merchandise may permit the captains and owners thereof to employ men upon their own account, subject to the same restrictions for the protection of the public health as if licensed by the health officer and quarantine commissioners.

Sec. 109. QUARANTINABLE DISEASES—The quarantin-

able diseases are yellow fever, plague, cholera, typhus or ship fever and smallpox, and any other infectious disease which has been or may be determined to be quarantinable by the health officer. Persons with insufficient evidence of vaccination and known to have been recently exposed to smallpox, shall be vaccinated as soon as practicable and detained until the vaccination shall have taken effect under regulations prescribed by the health officer.

Sec. 110. QUARANTINABLE VESSELS AND PERIOD OF QUARANTINE—Every vessel arriving at the port of New York from any place where a quarantinable disease existed at the time of departure, or which shall have arrived at any such place and proceeded therefrom to New York, or on board of which during the voyage any case of any such disease shall have occurred, shall remain at quarantine until the health officer grant a permit for the discharge of such vessel or cargo or both. Every vessel arriving at the port of New York from any foreign port and every vessel from a domestic port shall, on their arrival at the quarantine ground, be subject to visitation by the health officer. No quarantinable vessel shall depart from quarantine without the written permission of the health officer which shall be delivered by the master of the vessel to the department of health of the city of New York, according to the destination of the vessel, within twenty-four hours after the permit is received by him.

Sec. 111. DETENTION FOR EXAMINATION OF VESSELS—If a vessel which has not had, during the voyage, a case of quarantinable disease, is found in a condition which the health officer deems dangerous to the public health it shall be held and treated as the health officer may deem necessary.

Sec. 112. SANITARY MEASURES; ADMISSION TO PRATIQUE—The health officer may require before admission to pratique of any vessel, baths and other bodily care of the person on board; in addition to the treatment of the vessel, and cargo. Admission to pratique shall be preceded by as many visits to the vessel by the health officer as he may deem necessary.

Sec. 113. THE YELLOW FLAG—The health officer shall cause all vessels, warehouses and merchandise in quarantine to be designated by a yellow flag, and shall prohibit communication with or passage within range of the same, except under such restrictions as he may designate compatible with the public safety.

Sec. 114. VACCINATION—All persons coming from or through any foreign port or place, who may arrive at the port of New York, shall be liable to an examination by the health officer or his deputies, as regards their protection from smallpox. If any such person shall refuse to submit to such examination or on such examination shall be found not sufficiently protected from smallpox, or shall refuse to be protected by vaccination, such person, together with the person having him in charge if he be a minor, shall be detained in quarantine until he shall have passed the incubative period from the date of the last possible exposure; and the expense of such detention shall be charged by the commissioners

of quarantine to the consignees or owners of the vessel having such person on board, and such expenses so incurred shall be a lien upon such vessel.

Sec. 115. DUTY OF PILOTS—Every pilot belonging to the port of New York shall use his utmost endeavors to supply the health officer with such information as may aid him in protecting the public health.

Sec. 116. REMOVAL OF VESSELS, PERSONS AND THINGS FROM THE CITY OF NEW YORK—The health officer may, whenever in his judgment the public health requires it, order any vessel at the wharves at the city of New York to the quarantine grounds and may require all persons, articles or things introduced into the city from such vessel to be seized, returned on board thereof. If the master, owner, or consignee of such vessel cannot be found, or shall neglect or refuse to obey any such order of removal, the health officer may employ such assistance as may be necessary to effect such removal at the expense of such master, owner or consignee. He shall have the aid of the health and police departments of the city of New York in securing the return of the persons and things above referred to. Such vessel or person shall not return to the city without the written permission of the health officer. Any person employed to remove any such vessel, articles or things pursuant to this section, shall have a lien on such vessel, its tackle, apparel, and furniture for his services and expenses in effecting such removal, which may be enforced in the manner prescribed in the lien law for the enforcement of a lien upon vessels.

Sec. 117. PAYMENT OF EXPENSES OF QUARANTINE —The expenses incurred and services rendered by the health officer or any of his subordinates or employes in the discharge of any duty imposed by law in relation to vessels, merchandise, baggage, dunnage, persons or burials of persons under quarantine shall be paid for to the health officer by the master of the vessels for which the expenses shall have been incurred, or the services rendered, or in which such merchandise, baggage, dunnage and persons shall have arrived. Persons conveyed to and from the quarantine establishment in the quarantine steamboat shall pay the health officer for such transportation, unless conveyed for the master of a vessel, in which case the master shall pay for the same.

Sec. 118. LIEN FOR SERVICES AND EXPENSES—All such expenses, services and charges shall be a lien on the vessels, merchandise or other property in relation to which they shall have been made, incurred or rendered, and if such master, owner or consignee shall omit to pay the same within three days after the presentation of such account, the commissioners may proceed to enforce such lien in the manner provided in the lien law for the enforcement of liens upon vessels; or they may have or maintain an action against such master, owner or consignee to recover the amount of such expenses, services and charges, and such master, owner or consignee shall be deemed indebted to the commissioners ch amount and may recover from any passenger liable to pay

the same the amount of any expenses incurred on account of such passenger. The health officer shall have the same remedies as the commissioners to enforce any lien or to recover for any expenses, services or charges which are by law made payable to him if they remain unpaid for three days after payment shall have been demanded by him. The vessel, cargo or other property upon which any lien exists by virtue of any provision of this article, shall be held in quarantine until the amount due for the expenses, services or charges constituting such lien is paid, unless such master, owner or consignee shall execute to the quarantine commissioners a bond with sufficient sureties to be approved by them, conditioned for the payment thereof within ten days thereafter.

Sec. 119. WHEN MASTER OF VESSEL MUST PROVIDE FOR PASSENGER—All passengers on board any vessel under quarantine shall be provided for by the master of the vessel on which they arrive. If the master neglects or refuses to provide for them, or if they have been transferred to some other point within the jurisdiction of the health officer, they shall be maintained by the quarantine commissioners at the expense of the vessel, her owners or consignees, and the health officer may in his discretion refuse to permit the vessel, to leave quarantine until such expenses have been paid or secured. The commissioners may maintain an action against such owners or consignees to recover for such expenses, which shall be a lien upon the vessel, to be enforced as other liens thereon by the commissioners.

Sec. 120. POLICEMEN—The health officer may appoint policemen, whose services shall be paid for by him, and may dismiss them at pleasure and appoint others in their places. Such policemen shall perform patrol or police duty under the direction of the health officer, in connection with the quarantine establishment, and upon the waters of the bay of New York. They shall have all the powers possessed by policemen in the city of New York, and any person arrested by any such policeman for violating any law or regulation relating to quarantine in such port, may be taken by him before any court of criminal jurisdiction or any magistrate or police justice in said city, and thereupon such court, magistrate or police justice shall have jurisdiction to hear, try and punish the person arrested for the offense committed by him, in the same manner and with the same effect as if the offense had been committed within the territory over which such court, magistrate or police justice has jurisdiction to hear, try and punish for offenses committed within such territory.

Sec. 121. CONFINEMENT OF OFFENDERS—The health officer upon the application of the master of any vessel under quarantine may confine in any suitable place on shore, any person on board of the vessel charged with the commission of any offense punishable by the laws of this state or of the United States, and who cannot be secured on board of such vessel. Such confinement may continue during the quarantine of such person, or until he shall be proceeded against in due course of law. The expenses of

such confinement shall be charged and collected in the same manner as the expenses of providing for passengers, which the master of the vessel is required to pay.

Sec. 122. JURISDICTION OVER OFFENSES AND IN ACTIONS—Exclusive jurisdiction of the offenses specified in this article is hereby given to the court of general sessions of the county of New York and the court of special sessions of the city of New York, but the punishment in the last-named court for offenses shall not exceed ten days' imprisonment, or a fine of one hundred dollars, or by both such fine and imprisonment, and it shall be the duty of the district attorney of the county of New York, and the county of Kings and the county of Richmond, respectively, to prosecute all persons guilty of such offenses in preference to any indictment then in their courts, and for such courts to hear and try the offenses against the provisions of this chapter in preference to all other cases pending before it; and whenever any person shall be convicted on a trial for such offense, the court shall forthwith proceed to pronounce judgment upon him according to the terms prescribed in this chapter. For the purpose of determining all questions of jurisdiction in any civil or criminal action growing out of any act or thing done upon or connected with the West Bank hospital, such hospital shall be deemed to be with the county of New York. If any action has been or shall hereafter be commenced on any criminal prosecution instituted against the health officer, or any of his deputies or employes, or against the quarantine commissioners, or any of them, or against any person engaged in performing any duty or rendering any service in any matter or thing connected with the quarantine establishment or any part thereof, before any court or officer within the county of Richmond, or when such county shall be the place of trial named in the complaint in any such action, the defendant therein may apply to any justice of the supreme court for an order directing that such action shall be tried either in the county of New York or in the county of Kings, and such justice shall thereupon make an order removing such action from the county of Richmond to the county of New York or the county of Kings. If the action is pending in the supreme court, the order shall designate in which of the other counties herein named the trial shall be had; if the action is pending in the county court, such order shall remove the action into the supreme court, and designate one of such other counties as the county wherein it shall be tried. If the action shall have been commenced in the municipal court for the borough of Richmond, the order shall designate the court before which it is removed as herein required; and if it is a criminal action, the order shall direct to which officer or court the complaint or indictment shall be sent for trial, and shall provide for giving bail in such form and amount as such justice shall deem proper. The court or officer to which any action shall be transferred, pursuant to this section, shall proceed to the trial thereof in the same manner and with the same effect as if the action had been commenced before such court or officer and

the cause of action had arisen in the county to which the action shall have been removed. An action may be brought by and in the name of the quarantine commissioners to recover any penalty, forfeiture, sum of money or other cause of action incurred or required to be paid or authorized to be brought pursuant to any provision of this article or the preceding article.

Sec. 123. SPECIAL PORT WARDEN—There shall continue to be a special port warden in and for the port of New York, appointed by the governor, by and with the advice and consent of the senate, whose term of office shall be two years. He shall act as warden in regard to vessels under or subject to quarantine, but not in regard to vessels while stopping at quarantine for the purpose of visitation only by the health officer but not detained. He shall have all the powers of a port warden of the port of New York with reference to vessels or merchandise under or subject to quarantine, but he shall be subject to such regulations as the health officer may impose, for the protection of the public health. He shall receive for each survey or examination made by him the sum of five dollars, and shall make returns to the warden's office in the city of New York of each survey made by him, within twenty-four hours after it shall be made. He may appoint a deputy, who during his absence or inability to serve, may perform all his duties and exercise all his powers. No other port warden shall be appointed under quarantine.

Sec. 124. FEES AND COMPENSATION OF HEALTH OFFICER—The health officer shall receive fees for his services at not exceeding the following rates, namely: For inspection of any vessel from a foreign port, five dollars. For inspection of every vessel from a domestic port, south of Cape Henlopen, between May first and November first in each year, steamers three dollars, other vessels one dollar. For medical inspection of every one hundred or fraction of one hundred steerage passengers upon transatlantic steamers, two dollars. For each special permit issued for the discharge of cargo, portion of cargo or baggage brought as freight, twenty-five cents. For sanitary inspection of every vessel after the discharge of cargo or ballast, ten dollars. For fumigation and disinfection of every vessel from an infected port, or of such vessel as in the judgment of the health officer shall require fumigation and disinfection by reason of exposure to infection or contagion, fifty dollars, or such sum not more than fifty dollars or less than five dollars as may in the judgment of the health officer be deemed reasonable. For boarding every vessel and giving a permit between sunset and sunrise, at the request of the owner, consignee or master of the vessel,* when such pratique can be given without danger to the public health, five dollars. For vaccination of persons on vessels, each twenty-five cents. But no charge shall be made for the vaccination of any person who shall have been successfully vaccinated by the medical officer of the ship. He shall report annually to the board of quarantine commissioners all fees

*So in the original.

received by him. He shall pay all the salaries and wages of the deputy health officers and such bargemen, nurses, stewards and other employes as may be necessary for the performance of the duties imposed upon him by law for the carrying on of the quarantine establishment, except the salaries of the commissioners of quarantine, and shall pay the current expenses of running a steamboat for the transportation of persons to and from the establishment, for visitation and for burying the dead. The health officer shall be entitled to receive a total compensation of twelve thousand five hundred dollars per annum, and in case the aggregate amount of such fees remaining in the hands of the health officer at the end of each year, during which he shall continue in office, after payment by him of the salaries, wages and expenses which he is required by law to pay, shall be less than the sum of twelve thousand five hundred dollars, the balance shall be paid by the state treasurer on the warrant of the comptroller out of any money appropriated therefor. In case the aggregate amount of fees exceeds the sum of twelve thousand five hundred dollars per annum, and the expenses to be paid out of the same specified in this section, the surplus shall be used for the purchase of necessary books, scientific apparatus and other necessary appliances, as the health officer may decide or for the preservation and repair of the structures belonging to the quarantine establishment. The health officer shall keep an account of all moneys received or disbursed by him under this section. This section shall not affect the liability of masters or owners of vessels, passengers or other persons to pay for such services, labor or work as they are respectively required to pay or discharge by law.

Sec. 125. ANNUAL REPORT—The health officer shall make a report to the quarantine commissioners annually on or before January first, containing a statement of the general condition of the quarantine establishment, the statistics of the establishment in detail, and such other information and suggestions in regard to it as he may deem advisable. A duplicate copy of said report shall at the same time be filed by said health officer with the comptroller.

Sec. 2. This act shall take effect immediately.

State of New York, Office of the Secretary of State, ss.: I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom and of the whole of said original law.

JOHN T. McDONOUGH, Secretary of State.

SANITATION IN THE "MIDDLE KINGDOM."

Last week one of our literary contemporaries, says "The Surveyor," April 27, in reviewing a book on the troubled East, quoted from it the following characteristic passage, which originally

adorned an educational text-book issued by the Chinese Government: "How grand and glorious is the Empire of China, the Middle Kingdom! She is the largest and richest in the world. The grandest men in the world have all come from the Middle Empire. Europe is too far away from the centre of civilization, which is the Middle Kingdom; hence Russians, Turks, English, French, Germans and Belgians look more like little beasts than men, and their language sounds like the chirping of fowls." The Chinaman's contempt for the European is comprehensive, and, leaving on one side the great question of religion, it may well be doubted if any peculiarly Western ideas and methods excite greater disdain and antagonism than do those connected with sanitation. The annual report of the Shanghai Municipal Council for the year ended December 31, 1899, has recently been issued, and in another column we give a summary of the prominent details of practical work executed in the department of the municipal engineer and surveyor, Mr. Charles Mayne. Here we may draw attention to the very interesting way in which the medical officer of health, Dr. Arthur Stanley, discusses some questions of sanitation, and in particular certain points of contrast between East and West. There could be no greater mistake than to assume that there is nothing to be said for the Chinaman as a sanitarian. Sir William Crookes is only one, though perhaps the most eminent, of those who tell us that we have failed to solve the problem of economic sanitation, inasmuch as our methods of sewage disposal entail the wasting of millions of pounds' worth of the best fertilizing material, containing enormous quantities of nitrogen. This problem, Dr. Stanley reminds us, was long ago solved by the Chinese, and he adds: "While the ultra-civilized Westerner elaborates destructors for burning garbage, at a financial loss, and turns sewage into the sea, the Chinaman uses both for manure; he wastes nothing, while the sacred duty of agriculture is uppermost in his mind; and in reality recent bacteriological work has shown that fecal matter and house refuse are best destroyed by returning them to clean soil, where natural purification takes place." It must be admitted, however, that the success of the Chinaman in this particular direction is of a qualified kind, for it seems to be inevitably accompanied by domestic and other conditions which to the bulk of Europeans, even of the humbler classes, would be so intolerably offensive as to be utterly impossible, even if the system were otherwise practicable. All that Dr. Stanley ventures to say for Chinese hygiene by way of comparison is that it appears to advantage when

compared with mediæval English. That is not saying very much, and it would be very unpleasant to think of a densely-crowded country the sanitary conditions of which at the opening of the twentieth century were worse than those of mediæval England. The prolonged national life of the Chinese is a fundamental fact which must always be taken into consideration. Taken in conjunction with the vast population, the great duration of national life obviously implies that the birth rate must have a tendency to be considerably in excess of the death rate. It would be difficult to estimate the exact importance of Chinese sanitation as a factor in the duration of national life, but it is safe to say that the people evidently found something to suit them. Having found it, they adhered to it with that stubborn and impassive resistance to change or modification which is probably the chief secret of the long national life, though that life has been gained at the cost of absolute stagnation. The venerable and weighty authority of the Mosaic dispensation might be cited in support of certain Chinese hygienic customs, but as the discussion of the Mosaic sanitary precepts is now a recognized feature of sanitary congresses, our readers are not likely to find fault if we abstain from further referring to them here.

Discussing the sanitary problem in its practical aspects, Dr. Stanley expresses the opinion that under the conditions at present found in Shanghai the destruction of garbage by burning is out of the question; and that to adopt the water-carriage system and turn the sewage into the river, whence the water supply is derived, would be simply an act of sanitary suicide. His advice is that the best possible use should be made of what is good in Chinese hygienic methods. These have one great defect, however, and that is that the present system of disposing of excreta does not effectively prevent the propagation of typhoid and cholera; but Dr. Stanley is of opinion, nevertheless, that with modern hygiene grafted on the best of Chinese methods it should not be impossible to make Shanghai an exceedingly healthy place. The excreta being disposed of on natural principles, there is little real sewage in Shanghai, and hence it is considered that there is no necessity for a costly and elaborate system of drainage. One sanitary evil —that of overcrowding—does prevail in Shanghai in an aggravated form. In the opinion of the medical officer of health it is perhaps not only the greatest sanitary drawback of the city, but is rapidly increasing. In discussing typhoid fever, Dr. Stanley points out how recent researches indicate the measures that would prob-

ably prove most effective in the case of Shanghai. Polluted soil is a favorable medium for the typhoid bacillus, and it is necessary, therefore, to guard the soil from pollution. So long as the soil is pure the organism cannot thrive, but is quickly destroyed, and therefore nightsoil can with perfect impunity be used as manure in such circumstances; "but when the soil is polluted with filth which cannot drain away the germ finds a suitable medium, thrives and multiplies, and becomes a continuous source of infection." In the case of Shanghai, the chief danger in this respect is found in connection with the unpaved surroundings of Chinese houses, and "it has, therefore, been the object of the health department to promote surface drainage, remove stagnations, and encourage impermeable paving of yards, streets and alleys, and the cementing of basements of houses." Plague, again, is another infectious disease which can to a large extent be prevented from becoming epidemic by the employment of proper sanitary precautions. We may extract a few of the interesting points mentioned by Dr. Stanley. China is the original home of the "Black Death," which is generally identified with the bubonic plague, and which, in the fourteenth century, swept away about a fourth of the population of Europe, the number of deaths being estimated at 25,000,000. In recent years we have seen the plague endemic in Canton, Hongkong, Formosa, and the province of Yunnan, spreading since 1894 into Annam, the Malay archipelago and India. From India it spread to the Persian Gulf, then southwards to Portuguese Africa, Madagascar, Mauritius and Réunion, until it reached South America. More recently it has made its appearance in Egypt and Portugal, and now we read in the daily papers of the footing it is obtaining in Australia and elsewhere in the Southern Pacific. The extraordinary spread of the disease is attributed to the rapid communication between countries necessitated by modern commercial intercourse. The means of infection being thus greater than when communication between countries was less frequent and less rapid, there is, therefore, as Dr. Stanley points out, a more urgent necessity to adopt methods of preventing its introduction, and its spread if introduced. He is sufficiently optimistic to be convinced that, given increased attention to sanitation, the plague will, in civilized countries, become as extinct as typhus, which, as every one knows, is purely a filth disease. He considers, moreover, that places which reach a good sanitary standard, especially with regard to overcrowding and means of isolation, are practically plague-proof; but he is unable to place Shanghai in

this category, and therefore vigilance in preventing importation is the only safeguard. In former times flight and fatalistic resignation were the only methods of combating epidemics—if methods they can be called. It is so with the Chinese to-day, for Dr. Stanley tells us that they are the first to fly on the outbreak of an epidemic, and in Yunnan, where the plague is endemic, the inhabitants desert their villages as soon as they notice a mortality among rats. The important part taken by these rodents in the dissemination of plague is now generally recognized, and they are likely to suffer massacre in consequence; but the preventive measures to which Dr. Stanley attaches special importance are two in number—efficient inspection of shipping and the use of the prophylactic discovered by Haffkine, the eminent Russian bacteriologist who has been working in India under the British Government. The efficacy of this inoculation seems now to be established, but Dr. Stanley wisely says that "while preparing to immunize individuals with Haffkine's prophylactic, every endeavor should be made to immunize the locality by sanitary measures."

MEDICAL EXCERPT.

By T. P. Corbally, A. M., M. D.

Summer Diseases—Entero-Colitis and Dysentery.—Dr. R. Saint-Philippe, physician to the Hospital des Enfants, presented to the Académie de Médecine, on the 5th of June ("Gazette Hebdomadaire," 10th June), a communication on the treatment of dysenteriform entero-colitis with powder of guarana, a remedy formerly well known, but now nearly forgotten, although Trousseau used it with great success in his practice. This remedy is much used in Brazil in cases of diarrhœa and dysentery, which are so severe in warm countries. The communication of M. Rousseau Saint-Philippe, read before the Académie, concluded as follows:

1. The different forms of diarrhœa in children should be carefully distinguished from one another in order that they may be treated rationally. The appearance of the discharges can alone guide the treatment.

2. Entero-colitis, with glairy, viscous, dysenteriform discharges

is a peculiar variety, characterized by symptoms of an unusual etiological nature, and by special therapeutic indications.

3. This form of enteritis is very favorably modified by a fresh powder made of guarana paste, which ought to be employed in the form of a cold maceration prepared long in advance of use.

4. The doses vary according to age from 50 centigrams to 2 grams in twenty-four hours. The doses should be taken regularly and without interruption.

5. The physiological action is evidently complex and deserves to be studied carefully and its special properties distinctly described. Until more fully analyzed, it must be used as a tonic and substitute for other remedies.

6. Guarana deserves to be studied for its specific action and should be placed among anti-dysenteric remedies.

Guarana is undoubtedly a remedy of value in cases of entero-colitis and other affections of the alimentary tract, and Trousseau's name is sufficient to give it an honorable place among remedial agents.

Under our own observations, however, in some exceptionally severe cases, in which guarana and other remedies have failed, we have used *peptenzime,* and with such uniformly favorable results as recently to make it our chief reliance.

Moreover, when the secretions are greatly deranged, the addition of protonuclein has a very decidedly beneficial effect in restoring them. In some special cases a dram of each added to two or three ounces of zymocide will, in a comparatively short time, cause a great improvement in the distressing symptoms common to such cases.

Listerine is another remedy of exceptional value in such cases, particularly in the premonitory stages, or early symptoms. Indeed, as a preventive, if promptly used as an antiseptic against or to arrest the fermentative indigestion common to the excessive use of farinaceous food and acid fruit—the prevailing cause of summer complaints—and equally appropriate and efficacious for infants, alike subject to such indigestion from starchy food of one kind or another added to their milk before they are old enough to digest it. It is more or less useful in all forms of indigestion common to errors in diet and in the treatment of diarrhœal diseases. In doses of ten drops to a teaspoonful of water, with a grain or two of sugar, an infant will take it with avidity, with almost certain relief of wind colicor painful indigestion. As an antiseptic or forthe arrest

of fermentative processes taking place in the alimentary canal it may be taken in doses of ten drops to a teaspoonful, according to age or condition. Besides, it is an excellent adjuvant to bismuth, chalk and other mixtures indicated in intestinal disorders generally.

SERUM ANTI-ALCOHOLIQUE.—MM. Broca, Sapelier and Thibaut ("Le Progrès Médical," 2d June) presented to the Académie de Médecine a report on 53 new cases of alcoholism treated with anti-alcoholic serum. The results obtained were 13 arrests (échecs), 8 improvements and 32 cures (succès), which gives arrests 25 per cent., improvements 15 per cent. and cures 60 per cent.

From these cases they have drawn the following conclusions:

1. The action of the anti-alcoholic serum cannot be attributed to the effect of the imagination nor to suggestion, because among the cures some of the persons treated were not aware of the nature of their treatment nor of its object because there were hysterical cases, neurasthenics and impressionable cases and a few among the improved.

2. The action of the anti-alcoholic serum is only physiological and consists in an awakening of reflex action which, as a whole, may be considered as constituting the instinctive dislike that man has for alcohol.

The serum acts on the economy by exciting the different organs to resist the effects of the poison and by acting on the circulation, the nutrition, etc. It re-establishes the natural habit, the primitive physiological condition, in the place usurped by the second or vicious habit, the result of educational perversion of the taste in regard to alcohol. The anti-alcohol serum restores the alcohol maniac to his natural instinct. This alcohol maniac, treated with anti-ethyline, loses his alcoholic education; he loses his tolerance, his habit, his need and his taste for alcohol and for drinks that are strongly alcoholic.

The same results are produced in regard to wine, but slower and with greater difficulty, a condition which is explained by the greater weakness of wine relatively in alcohol and by the difference in the resulting waste caused by wine upon the digestive organs.

(This report is more interesting when considered in relation with the increased consumption of alcohol and alcoholic beverages, even in countries previously accustomed only to the use of light wines in moderate quantities. The age is progressive, but the progressive is universal, in vice as in virtue, in destructive tendency as well as in those of an elevating character.)

VIN MARIANI IN EXHAUSTION.—We have had occasion in numerous instances (The St. Louis "Medical and Surgical Journal") to administer "Vin Mariani" to business and professional men who complained of being gradually run down. The work of the office, the cares and worry entailed by business and the physical flaccidity brought on by overwork, all seemed to give way completely in a marvelously short space of time, despite the fact that the subjects continued uninterruptedly at their usual occupations. The notable fact to be observed is that in each instance the effect was permanent. But it must not be forgotten that, in order to make this result a lasting one, it is necessary to keep the patient upon a prolonged course in the use of "Vin Mariani." There is no doubt whatever that this preparation has proven itself a boon to mankind.

UROTROPIN.—Dr. H. A. Hare, of Philadelphia, in an editorial in "The Therapeutic Gazette" of January 15, 1900, entitled "Some of the Recent Remedial Measures Which Have Come to Stay," stated the following:

"Still another drug which possesses very great usefulness is Urotropin, a compound containing formaldehyde, which, on being absorbed, is decomposed so that the formaldehyde is set free in the urine, exercising its powerful antiseptic influence. As a result it has proved itself of very great value in the treatment of cystitis associated with phosphatic and alkaline urine, not only exercising a useful, permanent influence, but often giving relief after a very few doses have been taken. It has also been found by Richardson to be a valuable drug for the purpose of preventing the spread of infection by typhoid fever germs, since it so disinfects the urine of typhoid patients that the bacillus of Eberth is destroyed. The dose of Urotopin commonly employed is eight grains dissolved in half to one tumblerful of sparkling water and taken three times a day.

THE ANODYNE TREATMENT OF ACUTE PERITONITIS.—McCaffrey observes ("The Etiology, Pathology and Treatment of Acute Peritonitis"—"Medical News") that the most pronounced indication for treatment in peritonitis is that for the relief of pain. Blisters and counter-irritation, the older resorts, are practically useless. Hot water bags and poultices are far superior, but the relief they afford is only temporary. In some cases the ice bag is more grateful than hot applications. But whether hot or cold is employed, it should be relied upon only until other lines of treatment can be instituted. Papine should be given in teaspoonful doses every hour,

and the doses repeated frequently enough to afford the desired results. Relief from pain, short of narcosis, should be sought, and this is generally easily obtained by proper dosage. Papine does not produce nausea, but rather prevents this symptom. In the event of the development of more or less prostration a proper stimulant, such as strychnine or nitro-glycerine, should be judiciously employed.

A PICTURE OF THE GOUT, which purports to be a copy of a drawing published May 14, 1799, by H. Humphrey, 27 St. James street, London, issued by Messrs. Battle & Co., St. Louis, Mo., is an eminently suggestive battle piece in array against the vice of intemperance in high life. There is no advertisement in it, but a wonderfully impressive picture of ineffable pain. The publishers kindly offer to send a copy to any physician on application.

THE CONTAGIOUSNESS OF SMALLPOX is probably greater than that of any other disease. As reported in the Local Government Reports for the period, in 1884-5 it was found by Dr. Power (the now chief medical officer of the Board) that the disease was liable to be communicated, under favoring conditions, at the distance of a quarter of a mile. He showed that, if the district in which the Fulham Hospital was situated were divided into zones, by means of circles drawn upon a map of the locality, with the hospital in the centre, with radii of quarter, half, three-quarter and one mile distant, respectively, and an enumeration made of all the houses in each belt, and also of all houses invaded by smallpox, the proportion of invaded houses diminished as the distance from the hospital increased, and this relation held good in each "quadrant" of each zone. Within the quarter-mile zone there was only one approach to the hospital, and this was in the northwest quadrant. The distribution of cases in the several quadrants was not such as to suggest any relation to lines of traffic or ambulance routes. He concluded that diffusion only occurred when *acute* cases were aggregated, and perhaps only under certain atmospheric conditions.

Dr. Barry found a similar radiation of infection from hospital upon a larger scale in the Sheffield epidemic of 1887-8, but the possibility of personal connection could not be entirely excluded. These and similar investigations by other observers leave little room for doubt that under favorable conditions smallpox is liable to be conveyed through the air and for considerable distances.

BELGIAN LIFE-SAVING APPARATUS.*

Mr. Hubert de Wilde, of Ghent, is the inventor of a life-saving collar. Its merit was demonstrated at the swimming school in this city a few days ago. Comparison was made between this collar and the life buoys in common use as to their respective bearing power, rapidity of adjustment, freedom left to arms and legs, and general convenience. From my observation, I would judge it to be far superior to either the life buoy or cork jacket. Its bearing power was equal to, if not greater than, that of the buoy. The body is submerged with the head and neck only exposed, which prevents exposure and chilling and, as a general consequence, congestion. It is impossible to capsize, which has often occurred with the buoy; the arms are left perfectly free, and, what appears to be most important, its adjustment is instantaneous. It is so simple that a child 7 years of age can put it on without assistance. It can readily be adjusted while one is in the water.

The invention consists of a cork collar having an exterior diameter of 16½ inches and an interior diameter of 5 15-16 inches; the neck opening has a circumference of 18½ inches and is composed of two half collars fastened together with a hinge, in which there is a very strong spring, destined to maintain the collar always closed and firm; the opening is opposite the hinge. On each side of the opening there is a small holder made of oak, 3 inches in height and 2 inches in diameter, securely fastened. When pressure is exerted on the two holders, the collar spreads open and allows the head to pass into the collar. On letting go of the holders, the collar clasps itself automatically.

The collar is formed of thirty pieces of cork, each piece having the form of an isosceles triangle, with angles rounded, of which the base is 4¾ inches and the height 5 5-16 inches. The points are directed towards the interior, which gives the collar an elevation at its periphery of 4¾ inches, while at its interior there is a thickness of 1 3-16 inches. The pieces are cut radially and are strung on two heavy steel-wire stems concentrically riveted to the folding shutters of the hinge.

The weight of the apparatus is about 5½ pounds and its displacement of water about 12 quarts; consequently, its ascensional strength represents constantly from 18 to 20 pounds of iron.

RICHARD LE BERT,

GHENT, October 13, 1899. *Consul.*

* Consular Report, No. 232.

EDITOR'S TABLE.

SANITARIAN, AUGUST, 1900.

☞All correspondence and exchanges, and all publications for review, should be addressed to the Editor, Dr. A. N. Bell, 337 Clinton Street, Brooklyn, N. Y.

QUARANTINE AND COMMERCE.

Austin, Tex., July 8.—The health authorities of Louisiana and Texas have come to a timely and praiseworthy agreement between themselves and the railroad officials of those States respectively, with the approval of the Governors thereof, on such facilities for commerce, on the event of yellow fever in those States, or in either one of them, as will not impose restrictions on non-infective merchandise.

It is agreed by the State health officer of Texas that all traffic through New Orleans from points beyond, when carried on according to restrictions to be made by him from time to time, as may become necessary, shall be admitted.

It is agreed by the railroads, each for itself, that there shall be an inspector or inspectors to be employed and controlled by the State health officer and paid by the respective railroads whose duty it shall be to enforce this agreement at New Orleans, and to inspect and properly label each and every car of freight coming under this agreement. Freights coming from beyond New Orleans to be labeled by the Marine Hospital Service.

It is specially understood that the agreement, or any part thereof, may, with the consent of the Governor, be amended at any time, when in his judgment the interests of the State of Texas so demand, and that no power or authority invested by law in the State health officer or the Governor, is waived or impaired.

In consideration of the agreement of the State health officer of Texas, the Louisiana State Board of Health agrees to offer every facility in their command to the inspectors of the State of Texas in carrying out this agreement, and to in every way assist in carrying into effect the agreements. It is also mutually agreed by the health authorities to promptly notify each other of the occurrences of yellow fever in their respective States. The State Board of Health also agrees to use its influence with all the railroads entering New Orleans to secure acquiescence to this agreement.

This agreement between the health authorities of Texas and Louisiana should be made the basis of an interstate agreement by the State and Provincial Boards of Health of North America.

Such an agreement would promote such timely action against the introduction and circulation of infectious merchandise and exotic diseases, such prompt detection and isolation of cases of contagious disease and of persons liable to become infected on account of exposure, and such prompt discovery and disinfection or destruction of the material sources and conveyances of infection as would effectually and *should forever* supplant the barbarous "cordon" practice, which is, and always has been, inconsistent with practical sanitary knowledge and disgraceful to civilization.

THE PLAGUE.

The plague episode in San Francisco has been so extensively discussed in the newspapers as to render any summary of it by us at present unnecessary. Upon the whole, it has been very salutary, not only in San Francisco, but throughout the country, most of all in the large cities, as a stimulus to aggressive sanitary work.

New York, Boston, Philadelphia, Chicago, Cincinnati, St. Louis and many other cities have, under the spur of plague, discovered "Chinatowns" in their midst, of various degrees of disgraceful nastiness, convicting the health authorities of criminal neglect of common sources of infectious diseases of all sorts. They have proceeded to follow San Francisco's example, cleansed their foul disease-nests in promotion of the public health, and doubtless saved many lives that otherwise would have been sacrificed.

The New York Board of Health, through one of its most prominent officers, felicitates itself on having *once before,* eight years ago, under the spur of cholera, cleansed its "Chinatowns," and now promises to cleanse them annually hereafter, whether under the spur of the bubonic plague or not—purblind as the Board seems to have been hitherto to the perennial plagues of other infectious diseases alike dependent, as bubonic, on such nesting places from which the germs are disseminated in the community. To the profusion of such places in the borough of Brooklyn, particularly, is doubtless due the excessive infantile mortality in that borough. As for the other cities referred to, the health authorities, for the most part, endeavor to shirk responsibility for the conditions that have been revealed, after the manner of the pro-

verbial lawyer with an indefensible case: he seeks to divert attention from it by abusing the opposing client. So it is with the health authorities when brought face to face with the evidence of their neglected duty. No matter what the nature of the nuisance, or how far distant from the Chinese quarter, if there is any such quarter, they hold the Chinese responsible for it and curse them for daring to be in their precincts at all—but for whom they would be in no danger of bubonic plague to interfere with their willing tolerance of other plagues.

That the Chinese among us are not cleanly in their habits, that they are prone to huddle together in close quarters, is known to everybody. But so much greater is the reason for the *constant* vigilance and efforts of the health authorities to maintain sanitary conditions among them, not only for their own well-being, but for the protection of the public health.

The recent experience in San Francisco should be a lasting admonition to the health authorities of every American community against the neglect of any portion of the body-politic, no matter by whom it is composed.

Abroad. According to the most recent reports to hand: It continued epidemic in Bombay and throughout India; in Port-Said, up to June 1, the total number of cases reported was 47; in Hong Kong, during the two weeks, April 21-May 5, there were 67 cases, with 60 deaths, reported; June 1, 2 cases in Alexandria, 1 in Damietta; in Rio de Janeiro, Dr. James R. Whiting reports, in a letter to the "Medical Record," July 7: June 26, 25 new cases, with 12 deaths, were reported. In Manila the total number of plague cases reported during April was 53. Of these 38 were certified by the medical officers to be genuine cases of the disease (29 Chinese and 9 Filipinos), while 15 were declared not to be plague. For the preceding three months the number of cases certified as plague was 195 (134 Chinese and 61 Filipinos) out of 212 reported, leaving 17 which were declared not to be cases of plague. Of the 195 plague patients, 150 died.

CUBAN IDEAS OF SANITATION.

The "Medical Record" invites attention to several Cuban newspapers of the baser sort, which, when other occasions for fault-finding fail, accuse the American Government of extravagance in carrying out the various sanitary reforms which have been instituted. The writers share Svengali's amused horror at the waste of

so much good water in bathing, and deprecate the expenditure of so much time and labor in preventing the reaccumulation of the mountains of filth which formerly blocked the streets of their towns. "El Cubano" recently revealed one of the reasons for this opposition. The Cubans, it said, justly and properly object to the expenditure of such a large proportion of the revenues of the island in measures intended to repress yellow fever, for the only result of such measures is to protect the lives of the Americans, since the Cubans themselves are immune from yellow fever. The editor of "El Cubano" is evidently a man of broad views and unselfish ideals who ought to be made president of the first Cuban antivaccination society.

QUARANTINE SERVICE IN CUBA.

The President has recently signed an order systematizing the quarantine service in the island, and providing that, beginning July 15, a commissioned officer of the Marine Hospital Service shall be detailed on the staff of the military governor of Cuba, as chief of the quarantine service of the island. Estimates of expenditures for the service and auditing of accounts will be under the supervision of the military governor, while the enforcement of the treasury quarantine regulations and details of officers remain as provided in the executive order of January 17, 1899. The chief quarantine officer of the Marine Hospital Service in Cuba, being on the staff of the military governor, will be able to establish a thorough co-operation in all the ports, and with the Marine Hospital Bureau in Washington, in enforcement of its regulations.

"SCORCHING."

A sad story appeared in the "New York Times" of June 11. A young bicyclist was running a race with a trolley car. When he showed signs of tiring, the jeers of the men on the car spurred him to renewed effort, which was further encouraged by the favoring smiles of the ladies at his renewed efforts. Then came the tragedy. The onlookers, sitting at their ease in the car and themselves risking nothing, "saw him regain what he had lost, go forward a couple of feet, and then plunge headlong from his wheel. * * * Blood was pouring from mouth, ears, and nostrils, and he was badly cut and scratched"—and dead! No wonder that the reporter has occasion to add that, after the part they had played as unintentional causes in this tragedy, "the young men and the

young women slowly returned to their car. The young men did not jeer again. The young women had no heart to smile." This principle of "record-breaking" and of insatiable attempts to outdo others is the bane of the age. It is urged that it is the very life of progress. We do not think so. There would be just as much real progress—nay, more—in all careers in life if men would leave off pitting themselves so eternally against each other, and pit themselves instead against their own best without regard to what others might have done or be doing. Let each man strive in every walk and relation of life to attain the best of which he is capable, with due regard to the harmony of his own best interests, and let him neither mind if he is distanced by others on the one hand, nor be satisfied though he beat all the world on the other, yet fall short of the standard of his own capabilities. So will the harmonious progress of the race be better assured than by all the "record-breaking" and "scorching" possible.

LEWIS STEPHEN PILCHER, M.D., LL.D.

One of the features of the recent commencement exercises at Dickinson College, Carlisle, Pennsylvania, was the conferring of the degree of Doctor of Laws upon the President of the Medical Society of the County of Kings, Dr. Lewis Stephen Pilcher. Great interest attaches to the early history of this institution from a medical standpoint, for it really owes its birth to Benjamin Rush, signer of the Declaration of Independence, first Surgeon General of the United States Army, the most famous of American colonial physicians—soldier, statesman, patriot. While the name of his associate on the first Board of Trustees, John Dickinson, the Governor of the Commonwealth, was given to the institution, Benjamin Rush, says Dr. Himes, the venerable historian of the college, "by his unwearied, enthusiastic personal efforts, extending over more than a quarter of a century, contributed more largely to the permanent establishment of the institution." For a surgeon of to-day to receive its highest honor from an institution with so distinguished a history, may well be the cause of congratulation upon the part of his friends. Dr. Pilcher was also complimented by election to honorary membership in the Phi Beta Kappa Society of the college.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The date of the next meeting of the American Public Health Association at Indianapolis has been changed to October 22-26.

The meeting of the Section of Bacteriology and Chemistry will be held Monday, October 22, in the Pathological Laboratory of the Central Insane Hospital at Indianapolis.

THE NEW YORK SCHOOL OF CLINICAL MEDICINE has not been discontinued, as erroneously announced to the contrary in a few of the medical journals.

PRIZES FOR CONTRIBUTIONS ON TUBERCULOSIS.

"The Medical Mirror," of St. Louis, offers $1,000 in prizes, to be distributed as follows: $500, $200, $100, and four prizes of $50 each. The following prominent gentlemen have accepted appointment on the committee on awards: Dr. Wm. Osler, Baltimore, Md.; Dr. Geo. F. Butler, Chicago, Ill.; Dr. A. R. Kiefer, St. Louis, Mo.; Dr. C. Lester Hall, Kansas City, Mo.; Dr. H. R. Hall, St. Louis, Mo.; Dr. Lewis E. Lemen, Denver, Col.; Dr. Jos. M. Mathews, Louisville, Ky.; Dr. W. W. Grant, Denver, Col.; Dr. Thos. Hunt Stucky, Louisville, Ky.; Dr. Hugo Summa, St. Louis, Mo.; Dr. Walter Wyman, Washington, D. C. Entries close Oct. 1, 1900, and the award is made Jan. 1, 1901, giving the contestants three months in which to prepare their papers and to include clinical reports.

DELINQUENT SUBSCRIBERS.

Justice Johnson has decided in the case of the "Odd Fellows' Review" against John Gaffy, that if a subscriber desires to have a paper discontinued to his address he must first pay the publisher the amount he owes for the subscription and make a request that the paper be discontinued to his address. The evidence in the case brought forth the fact that Gaffy subscribed and paid for the "Review" for a year and continued to accept it after his subscription had expired. Later he changed his address without notifying the publisher, and claimed not to have received the paper. This, the court held, was through no fault of the publishers, who received a judgment for the amount due and costs.—From the St. Paul "Dispatch."

DEATHS.

PAUL GIBIER, M.D.

The sudden death of Dr. Gibier, June 9, 1900, the result of a runaway accident, deprives the New York Pasteur Institute of its

founder and director, and preventive medicine of an accomplished votary. He was born in France in 1851, and was graduated from the University of Paris. In 1885, he was commissioned by the French government to study the cholera epidemic then raging in Spain. His work there procured for him a gold medal from the French Republic and a membership in the Legion of Honor. In 1888 he was sent to study the yellow fever in Havana and Florida. In 1890 he established the Pasteur Institute in New York City. He has since been at the head of that institution, and also of a sanitarium at Suffern, N. Y.

A. J. C. SKENE, M.D., LL.D.

Dr. Skene, of Brooklyn, died on the evening of July 4 at his summer home in the Catskill Mountains. He was one of the foremost specialists in the diseases of women and children, and had been devoting much of the time of late to the establishment in Brooklyn of a free hospital for women. It was to be known as the Skene Hospital for Self-supporting Women, and to open before the close of the present year. Dr. Skene was a native of Aberdeenshire, Scotland, and belonged to a famous family of warriors, statesmen, and professional men. He was graduated from the University of Michigan and from the Long Island College Hospital, served in the army in the Civil War as an army surgeon, and had been for a long time dean of the Long Island Medical College. He was also the president of the New York Obstetrical Society, and was an amateur sculptor of ability.

MORTALITY AND MORBILITY REPORTS AND REVIEWS.

STATE OF NEW YORK: The sanitary districts into which the State is divided are as follows: *Maritime District,* includes New York, Brooklyn, Long Island, Staten Island and Westchester County; *Hudson Valley District,* all the counties on either side of the Hudson River, except Westchester, to and including Albany and Rensselaer; *Adirondack and Northern District,* the northern section of the State, the counties of Washington, Warren, Hamilton, Essex, Clinton, Franklin, St. Lawrence, Jefferson and Lewis; *Mohawk Valley District,* Schenectady, Schoharie, Saratoga, Montgomery, Fulton, Herkimer and Oneida Counties; *Southern Tier District,* the seven counties along the southern border of the

State; *East Central District,* Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga and Cortland Counties; *West Central District,* Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee and Wyoming Counties; *Lake Ontario and Western District,* Oswego, Wayne, Monroe, Orleans, Niagara and Erie Counties.

The State Board of Health Bulletin for May reports the number of deaths for the month to be 10,957—1,529 less than the preceding month, the death rate having decreased from 20.5 to 17.5.

Maritime District, 3,935,000: Total deaths, 6,207; death rate, 18.0; deaths under five years, 2,363; from zymotic diseases, per 1,000 from all causes, 100; from cerebro-spinal meningitis, 23; typhoid fever, 36; malarial diseases, 25; smallpox, 1; scarlet fever, 54; measles, 95; erysipelas, 33; whooping-cough, 63; croup and diphtheria, 220; diarrhœal diseases, 86; acute lung diseases, 1,180; consumption, 812; cancer, 198.

City of New York, 3,654,594: Total deaths, 5,901; death rate, 19.0; deaths under five years, 2,267; from cerebro-spinal meningitis, 22; typhoid fever, 35; malarial diseases, 23; smallpox, 1; scarlet fever, 54; measles, 85; erysipelas, 32; whooping-cough, 61; croup and diphtheria, 214; diarrhœal diseases, 74; acute lung diseases, 1,118; consumption, 765; cancer, 135.

Borough of Manhattan, 2,007,241: Total deaths, 3,346; death rate, 19.6; deaths under five years, 1,158; from cerebro-spinal meningitis, 8; typhoid fever, 16; malarial diseases, 8; scarlet fever, 27; measles, 40; erysipelas, 32; whooping-cough, 26; croup and diphtheria, 37; diarrhœal diseases, 37; acute lung diseases, 672; consumption, 407; cancer, 112.

Stench in the Court House.

Six months ago the Board of Health passed upon an inspector's report of the unsanitary condition of the County Court House, and recommended needful repairs. Two months subsequently the Bar Association complained of bad odors and passed a resolution calling upon the Appellate Division of the Supreme Court to order the County Court House to be closed on June 1 so that much-needed repairs could be made. But the building remains in the same unsanitary condition: the old, worn-out and dripping water pipes and seepage drainage pipes, and "ventilators" which the health inspectors said were worse than no ventilators at all, are on business bent when the court opens again in October.

There are some lawyers and clerks in more or less close relation with the powers that be, who say that improvements will shortly begin. Indeed, the work has actually begun, said a "Sun" reporter three weeks ago: begun by adding inside blinds to the 350 windows by which the building is lighted.

"Oh, that's all right," said an old Bencher, on being told of it, "they are afraid some one will steal the bad smells or will see the leaking pipes and the worn-out ventilators."

Disinfection of the Sweatshops and Mudsills.

Early in July, with a special appropriation of $20,000 for the purpose, the Board of Health, under the special supervision of Assistant Sanitary Superintendent Dillingham, moved upon the sweatshops, Chinese and Italian quarters of the borough of Manhattan. "There is no reason for this other than the warm season," said Dr. Dillingham. "We have learned from experience that a dollar judiciously expended along preventive lines will do more than many dollars after some epidemic breaks out. Some areas in New York are the most densely populated in the world, and some of these are always unclean, despite our utmost efforts. We have a sufficient police escort to enable us to carry on the work without hindrance, and intend to cleanse and disinfect all of them. The last disinfection of this sort," he said, "was made in 1892, when the cholera was raging in Europe. The work will now be done every summer"—without the admonition of cholera or bubonic plague, it is to be hoped.

Borough of the Bronx, 174,370: Total deaths, 357; death rate, 24.0; deaths under five years, 94; from typhoid fever, 2; scarlet fever, 7; croup and diphtheria, 28; acute lung diseases, 47; consumption, 101; cancer, 10.

Borough of Brooklyn, 1,267,258: Total deaths, 1,861; death rate, 17.4; deaths under five years, 622; from cerebro-spinal meningitis, 12; typhoid fever, 154; scarlet fever, 19; measles, 31; erysipelas, 6; whooping-cough, 25; croup and diphtheria, 54; diarrhœal diseases, 28; acute lung diseases, 338; consumption, 216; cancer, 55.

Sterilized Milk.

With the advent of hot weather, early in July, C. C. Martin, the Bridge Superintendent, put the free sterilized milk plant.

This plant was first opened through the charity of Nathan Straus, who contributed the milk, and the cost of maintenance was sustained by private subscriptions through the Brooklyn

Bureau of Charities. The plant is located under one of the bridge arches at Prospect and Washington streets. The distribution of the milk went on all through last summer with inestimable benefit to the most needful people, who receive the best of milk free of cost. As last year, when it was opened on the 12th ultimo, Mr. Straus came forward with the offer of as many bottles of milk as the health officials thought would be necessary. Sanitary Superintendent Robert A. Black asked for 2,400 quart bottles a day, and Mr. Straus readily acceded to the request. In the meantime Secretary Nichols, of the Bureau of Charities (a private organization), was communicated with. He said that he had already received the necessary $2,500 to run the plant through the season and that that sum was at the disposal of the Health Department right away. The necessary preliminaries were satisfactorily arranged and the depot promptly opened. And besides this main plant, there will be five other distribution depots in different sections of the borough.

Borough of Queens, 136,559: Total deaths, 232; death rate, 20.0; deaths under five years, 66; from cerebro-spinal fever, 1; typhoid fever, 2; malarial diseases, 4; scarlet fever, 1; measles, 6; erysipelas, 1; croup and diphtheria, 5; diarrhœal diseases, 5; acute lung diseases, 40; consumption, 25; cancer, 7.

Borough of Richmond, 69,266: Total deaths, 105; death rate, 18.0; deaths under five years, 27; from measles, 6; whooping-cough, 2; croup and diphtheria, 3; acute lung diseases, 21; consumption, 16; cancer, 1.

Hudson Valley District, 700,000: Total deaths, 1,042; death rate, 17.5; deaths under five years, 205; from cerebro-spinal meningitis, 9; typhoid fever, 22; malarial diseases, 1; scarlet fever, 2; measles, 31; erysipelas, 2; whooping-cough, 15; croup and diphtheria, 22; diarrhœal diseases, 14; acute lung diseases, 153; consumption, 130; cancer, 46.

Albany, 100,000: Total deaths, 152; death rate, 17.8; deaths under five years, 24; from typhoid fever, 4; measles, 9; croup and diphtheria, 4; acute lung diseases, 14; consumption 25; cancer, 6.

Adirondack and Northern District, 390,000: Total deaths, 500; death rate, 15.0; deaths under five years, 70; from cerebro-spinal meningitis, 7; typhoid fever, 12; scarlet fever, 3; erysipelas, 7; whooping-cough, 3; croup and diphtheria, 2; diarrhœal diseases, 6; acute lung diseases, 94; consumption, 46; cancer, 19.

Mohawk Valley District, 395,000: Total deaths, 526; death

rate, 15.5; deaths under five years, 70; from cerebro-spinal meningitis, 3; typhoid fever, 8; scarlet fever, 4; measles, 2; erysipelas, 1; whooping-cough, 3; croup and diphtheria, 10; diarrhœal diseases, 9; acute lung diseases, 70; consumption, 43; cancer, 25.

Utica, 55,000: Total deaths, 98; deaths under five years, 23; from croup and diphtheria, 4; diarrhœal diseases, 2; acute lung diseases, 11; consumption, 7; cancer, 5.

Southern Tier District, 425,000: Total deaths, 606; death rate, 16.7; deaths under five years, 100; from cerebro-spinal meningitis, 2; typhoid fever, 7; malarial diseases, 1; scarlet fever, 2; measles, 2; erysipelas, 5; whooping-cough, 8; croup and diphtheria, 13; diarrhœal diseases, 7; acute lung diseases, 122; consumption, 52; cancer, 22.

Binghamton, 45,000: Total deaths, 80; death rate, 27.0; deaths under five years, 15; from typhoid fever, 1; scarlet fever, 1; erysipelas, 1; croup and diphtheria, 5; acute lung diseases, 23; consumption, 7; cancer, 3.

Elmira, 40,000: Total deaths, 59; death rate, 17.0; deaths under five years, 12; from typhoid fever, 2; acute lung diseases, 12; consumption, 8.

East Central District, 415,000: Total deaths, 516; death rate, 15.0; deaths under five years, 73; from cerebro-spinal meningitis, 4; typhoid fever, 3; scarlet fever, 4; measles, 8; erysipelas, 3; whooping-cough, 6; croup and diphtheria, 4; diarrhœal diseases, 8; acute lung diseases, 81; consumption, 57; cancer, 29.

Syracuse, 120,000: Total deaths, 172; death rate, 16.9; deaths under five years, 36; from cerebro-spinal meningitis, 2; measles, 5; erysipelas, 3; whooping-cough, 5; croup and diphtheria, 2; acute lung diseases, 30; consumption, 16; cancer, 10.

West Central District, 325,000: Total deaths, 413; death rate, 15.0; deaths under five years, 64; from typhoid fever, 2; scarlet fever, 1; measles, 6; whooping-cough, 3; croup and diphtheria, 9; acute lung diseases, 59; consumption, 34; cancer, 14.

Auburn, 35,000: Total deaths, 52; death rate, 20.1; deaths under five years, 13; from measles, 1; croup and diphtheria, 2; acute lung diseases, 16; consumption, 5; cancer, 1.

Lake Ontario and Western District, 890,000: Total deaths, 1,038; death rate, 13.3; deaths under five years, 98; from cerebro-spinal meningitis, 3; typhoid fever, 12; scarlet fever, 1; measles, 17; whooping-cough, 10; croup and diphtheria, 10; diarrhœal diseases, 23; acute lung diseases, 140; consumption, 110; cancer, 39.

Buffalo, 370,000: Total deaths, 399; death rate, 13.0; deaths under five years, 98; from cerebro-spinal meningitis, 2; typhoid fever, 5; measles, 5; croup and diphtheria, 6; diarrhœal diseases, 16; acute lung diseases, 51; consumption, 49; cancer, 19.

Embalmed Milk.

The Health Commissioner having learned that some of the milk dealers in the city were using soda of one sort or another, boric acid, formalin, etc., as milk preservatives, on July 5 notified "each and every person dealing in milk, in whatsoever way, that the use of such articles is condemned and prohibited under the penalty of *revoking of permit and license to engage in the milk business in this city,* and, additionally, the prosecution under the provisions of the State Law and the City Ordinances covering this particular offense. The presence of these articles in milk houses will be construed as use, as well as the detection of the same in milk itself."

Rochester, 180,000: Total deaths, 200; death rate, 13.1; deaths under five years, 31; from typhoid fever, 1; croup and diphtheria, 1; acute lung diseases, 27; consumption, 28; cancer, 7.

Health of the Babies.

Health Officer Goler admonishes mothers on the care of infants. "How to keep the baby well," "Air," "Food and Water," "Milk," "Sleep," "Clothing," "Bathing" and general rules for the care of sick children:

"Give it pure air day and night; give it no food but mother's milk, milk from the bottle, or food directed by physician; whenever it cries or is fretful, do not offer it food, but give it water; be sure that it gets enough sleep, two naps during the day, at least; do not put too much clothing on it; bathe it in a tub every day; don't handle it, let it alone."

Explained in detail and altogether an admirable handbook for mothers of every degree.

Total for the whole State, 7,400,000: Total deaths, 10,957; death rate, 17.5; deaths under five years, 3,160; from cerebro-spinal meningitis, 51; typhoid fever, 102; malarial diseases, 28; smallpox, 1; scarlet fever, 71; measles, 111; erysipelas, 52; whooping-cough, 111; croup and diphtheria, 290; diarrhœal diseases, 157; acute lung diseases, 1,902; consumption, 1,285; puerperal diseases, 96; diseases of the digestive system (not diar-

rhœal), 786; diseases of the urinary system, 797; diseases of the circulatory system, 986; diseases of the nervous system, 1,203; cancer, 393; accidents and violence, 583; old age, 495; unclassified, 1,405.

The report of the tuberculosis committee of the State Board of Health for the month of May shows that 1,075 head of cattle were subjected to the tuberculin test, of which number 33 were condemned and six destroyed. Since January 1, 1,443 head of cattle have been tuberculin tested; 1,242 were grades, or common stock; 80 Holsteins, and 70 Jerseys. Forty-seven grades, four Jerseys and one Holstein have been destroyed. At the present time 1,000 head of cattle in Syracuse still remain to be tested, and so far the test has resulted in the condemnation of only about one per cent., which should prove conclusively that the first test, made over a year ago, which resulted in the condemnation of about five per cent. of the entire number, was both well done and the diseased animals condemned pretty thoroughly disposed of.

CALIFORNIA.—Los Angeles, 103,000: Report for the month of May: Total deaths, 146; death rate, 17.0; deaths under five years, 35; from specific infectious diseases, 28; diphtheria, 2; typhoid fever, 2; cerebro-spinal meningitis, 4; consumption, 37; acute lung diseases, 19; cancer, 8.

San Francisco. No official report received later than for April. The courts have coincided with the Governor and decide (June 14) that plague has not existed there, and raised the "cordon." That the disease did not prevail in the Chinese quarter after the institution of the "cordon" is strong evidence that there was no plague among them, for of all means calculated to test its presence and promote its spread, the "cordon" excels.

COLORADO.—Denver, 175,000: Report for May: Total deaths, 181; death rate, 10.2; deaths under five years, 37; from scarlet fever, 2; diphtheria, 1; typhoid fever, 2; acute lung diseases, 24; consumption, 38; cancer, 8.

Despite the failure of the "cordon" to incite an epidemic of plague in Chinatown, San Francisco, Dr. Tyler, secretary of the State Board of Health, June 22, filed a report with the Governor setting forth reasons why the quarantine against the bubonic plague should remain in force in Colorado.

CONNECTICUT.—The State Board of Health Bulletin reports

1,230 deaths during May, from 167 towns, with an aggregate population of 911,234. This is 448 less than in April, and 205 more than in May of last year, and 118 more than the average in May for the past five years. The death rate was 16.0 for the large towns, 16.6 for the small towns, and 16.1 for the whole State. The deaths from communicable diseases numbered 118, being 9.6 per cent. of the total mortality. There were 315 deaths under five years of age.

From scarlet fever, 6; cerebro-spinal fever, 5; diphtheria and croup, 22; typhoid fever, 10; acute lung diseases, 191; consumption, 127.

Twenty-Second Annual Report, for 1899, and Registration Report for 1898. Pp. 336-196.—This report is alike remarkable for the completeness of the review of practical sanitation in the State and its fullness of detail. There are 168 towns with a town registrar of births, marriages and deaths in each, and more than 200 local health officers of the towns, cities and boroughs.

During the year there was not a single failure by any town registrar to make his monthly report of the mortality in his town, and also report of the births and marriages, and less than 3 per cent. of the local health officers failed to report promptly the contagious diseases of their respective towns; consequently the State Board was kept in regular and frequent touch with the prevailing condition of health in every part of the State.

The total deaths reported for the calendar year 1899 numbered 14,382, as against 14,170 in the previous year. While there have been no violent and destructive epidemics in the State, there have been more than the usual number of mild ones. Diseases which are often malignant and fatal when occurring as epidemics have been numerous during the year, but exceptionally mild in type and causing only a low percentage of mortality.

Cerebro-spinal fever is an exception as regards severity and fatality. Four cases, all fatal, occurred in Bloomfield, in April. The water of a suspected well was examined at the City Laboratory at Hartford, and the specific germ, identified as the cause of the disease, was discovered. The identity was verified by inoculating a pure culture in a rabbit, "which died in about forty hours with convulsions." Four horses which drank the water from this well also died of the disease. In Danbury there were 18 cases with 17 deaths, happening at intervals through April, May, June

and July. The source of the infection in this outbreak was not discovered.

Owing to the exceedingly contagious nature of measles, and the frequent failure to report first cases, there were a good many towns in which it became epidemic, sometimes causing the closing of schools. But the value of isolation and disinfection was well illustrated in both this disease and scarlet fever, because whenever the first cases in a community were properly cared for, the extension of the malady was always prevented.

The constant work of the year was dealing with nuisances, the disposal of garbage and sewage and protection of the water supplies, in which there was much progress. The local health officers have been greatly strengthened by the increased knowledge and interest of the citizens generally in the danger of nuisances; and the people have well-nigh ceased to regard the pollution of streams an inherent right. Norfolk completed and South Manchester began a system of sewage disposal by land filtration. These were the only new undertakings by filter beds during the year. The towns of Meriden, Litchfield, Bristol and Danbury have been using the method satisfactorily for several years. There is also a small filtration plant working very successfully at Springside Home, which is the euphonious name of the New Haven Alms House. Surveys have been made for the treatment of sewage by land filtration at Naugatuck, New Britain, Ridgefield, Rockville, Southington, Wallingford and Waterbury. Greenwich and Jewett City have begun new sewers.

Garbage disposal is still unsatisfactory. But there is some improvement. Bridgeport has recently erected a new crematory for the destruction of garbage, and the Board of Aldermen of Waterbury are considering plans for the construction of a similar one.

Of the water supplies, there are now about sixty towns in which water has been introduced from some common source for public use. Three-quarters of these are managed by private corporations, inaugurated and conducted for pecuniary profit to the stockholders. It is so much a question whether the public welfare is sufficiently considered by these private enterprises that, in several other States, notably Massachusetts, New York and Ohio, a water supply for public use is not allowed except after approval by their respective State Boards of Health, to which the surveys, sources of supply and all necessary information is first submitted.

As compared with the other New England and Northern States,

the sources of good supply in Connecticut are scarce. The most common supply being from surface water, which is an inferior source, and more liable to contamination than water from other sources.

It is abundantly manifest that the examination and reports of the State Board of Health on the quality of the public reservoirs of water in the State has had a potent influence in stimulating private companies to protect the purity of the water much more than they otherwise would have done.

During the year the following towns began or completed new water works: Branford, Clinton, Cromwell, Enfield, Guilford, Madison, Milford, Ridgefield (from artesian wells), and Woodmont. The Niantic camp grounds also provided a new supply from wells.

But there is as yet no public water supply in the State which is purified for use by filtration. That is a result yet to be obtained, and with it a marked reduction in the prevalence of typhoid fever.

Vital statistics summed up for the year 1898:

Births, 21,023; birth rate per 1,000 population, 23.5. Marriages, 6,565. Divorces, 429—one to every 14.62 marriages. Deaths, 14,170; death rate, 15.8: one birth to every 42.4 persons; one marriage to every 136 persons; one death to every 63 persons. Of the cause of death, 19.53 were from zymotic diseases; 1,438—10.1 per cent. of the total mortality.

During the ten years previous to 1899 the average deaths, annually, in 100,000 of the population were:

		Year 1899.
Measles	9.0	4.0
Scarlet fever	14.0	5.5
Diphtheria and croup	60.7	26.0
Whooping-cough	13.7	12.5
Typhoid fever	33.1	19.2
Infantile diarrhœa	114.8	109.5
Consumption	175.8	155.0
Pneumonia	161.1	149.2

DISTRICT OF COLUMBIA.—294,674—89,288 colored. Report for four weeks ending June 30: Total deaths, 455—225 colored, and 203 under five years of age. Death rates, white, 14.6; colored, 32.6; total, 23.6; from typhoid fever, 11; diphtheria, 5; scarlet fever, 2; acute lung diseases, 22; consumption, 43; cancer, 7.

FLORIDA.—Eleventh Annual Report of the State Board of Health, for the year 1899: It comprises reports in detail of the county health officers severally, and special reports on the introduction of yellow fever in Key West, Miami and Port Tampa; and reports of smallpox incidentally in many places.

In summing up the circumstances with regard to yellow fever, the State health officer's conclusions are:

"That yellow fever was introduced last year into Key West, Miami and Port Tampa City from Cuba no thoughtful and impartial reader of the reports above submitted can entertain any doubt. Cuba was the only West Indian island or foreign country possessing yellow fever in endemic form, with which any trade with Southern Florida was had during 1899, and therefore to seek for causes in obscure ways of importation, as, for instance, through New Orleans by the fruit trade, or through the same city from Mexico, or via New York, is both irrational and illogical. The proposition is indisputable, the disease was imported into Florida from Cuba. * * * *

"The reports of Drs. Sweeting, Horsey, Jackson and Weedon, acting and reporting independently of each other, all suggest that inefficient disinfection of vessels or careless administration of passenger pratique at Havana and Nuevitas, or both, to have been the source of importation into this State."

Considerable additional testimony is adduced to the incompetency of the Marine Hospital Service in the premises. Then follows a review of what the health officer considers the shortcomings of the Marine Hospital Service, and an argument in favor of supplanting it by the enactment of the Spooner and Ray bills before Congress.

Nevertheless, he expresses his thanks to Surgeons H. R. Carter and R. D. Murray, of the Marine Hospital Service, for aid in preventing the spread of the disease and the care of the sick with it.

About the prevention of yellow fever in Florida, otherwise than by its importation, little or nothing is said: the local conditions seem to be regarded as of no importance.

ILLINOIS.—Chicago, 1,750,000: Report for March: Total deaths, 2,547; death rate, 14.4; deaths under five years, 783; deaths from typhoid fever, 27; scarlet fever, 21; diphtheria and croup, 82; acute lung diseases, 731; consumption, 263; cancer, 76.

The Canal Has Paid One-third of Its Cost.

There were but two deaths reported from typhoid fever during the week ending June 9.—"It is barely possible," says the Health Department bulletin, "that the great decrease in the impure-water diseases since the opening of the drainage channel is merely a coincidence, but a comparison of the first five months of each of the ten years between 1890 and 1899 with the first five months of 1900 strongly indicates a relationship of cause and effect.

"During the ten-year period there were 3,244 deaths from typhoid—an average of 324 for each five months, with a minimum of 134 in 1899 and a maximum of 743 in 1891. During the five months of 1900 there were 104 typhoid deaths—a reduction of 22.4 per cent. from the previous minimum of 66 per cent. and of 86 per cent. from the previous maximum.

"In dollars and cents, the 330 fewer deaths since Jan. 1, 1900, than the previous ten years' average represent, at the legislative value ($5,000) of human life, $1,100,000—a fairly satisfactory installment on the cost of the drainage channel for the first five months of its operation."

INDIANA.—Indianapolis, July 3, 1900: I desire to call attention to the facts concerning the mortality statistics which are now being collected in Indiana. In February, 1899, the legislature passed a health law, which had in it certain sections making it possible to collect accurate mortality statistics. This law first commands that all deaths shall be reported, either by the physician, if any is in attendance, or, if not, then by the householder, or the death may be reported by the health officer or the coroner; reports to be rendered upon blanks, furnished by the State Board of Health. There is a further command that human remains shall not be buried nor placed in vaults without a burial permit from the Health Department, and said burial permit shall not be issued unless the health officer has in hand a certificate and record of death fully and completely filled out. In the event of a burial without a permit, then it is the duty of the coroner, upon information, to proceed to disinter, hold an inquest and secure the record. The fees of the coroner are to be paid from the treasury of his county. In addition to this, the undertaker or other person who may have buried the remains without a permit is subject to a fine of not less than ten nor more than one hundred dollars. Failure of attending physician or householder to fill out certificates is also

punishable with a fine of not less than ten nor more than one hundred dollars. The law further requires that each month the certificates and records of death shall be promptly returned to the State Board of Health for classification, tabulation and record. Health officers are established in every county, in every town and in every city. They are paid according to the number of people they serve. This excellent law went into effect last October, and since that period Indiana has been in receipt of almost absolutely correct mortality returns. Our Monthly Bulletin gives these returns by geographical sections, by counties and by cities. At the end of the year we shall present these statistics in various tables. You can very easily see that the penalty of disinterment is so severe as to secure accuracy. Our morbility statistics are not yet quite satisfactory, but the penalty for failure of physicians to report contagious and infectious diseases, and they must be reported immediately, is a fine of not less than ten nor more than one hundred dollars. The same is in regard to failure to report births. The law is being enforced pretty well over the State, and the higher order of physicians everywhere take deep interest in the work and further it by their moral influence and in every way possible. Our county medical societies have in many instances passed resolutions approving the law and the efforts of the State Board to secure accurate vital statistics. In order to secure the best work, the State Board of Health is endowed with power to discharge any health officer for "intemperance, failure to collect vital statistics, obey rules and by-laws, keep records and make reports and answer letters of inquiry of said State Board of Health concerning the health of the people."

"We have, so far, had occasion to discharge but one officer. He was of the old order and did not seem to appreciate that a new era in health matters had come into Indiana."

J. N. Hurty, Secretary.

The bulletin of the State Board of Health for June says: "The following diseases increased in area of prevalence over the preceding month: Diarrhœa, intermittent fever, cholera morbus, whooping-cough, cholera infantum, dysentery. The diseases which decreased in area of prevalence were rheumatism, tonsillitis, bronchitis, measles, scarlet fever, influenza, erysipelas, pleuritis, pneumonia, diphtheria, croup, puerperal fever.

Smallpox was reported in Indiana during the month of June at twenty places, aggregating 76 cases, with one death.

IOWA.—Davenport, 42,000. Report for May: Total deaths, 45; death rate, 12.8; deaths under five years, 17; from acute lung diseases, 6; consumption, 6; cancer, 2.

LOUISIANA.—New Orleans, 300,000—90,000 colored: Total deaths, 668—292 colored, and 244 under five years of age; death rates, white, 21.2; colored, 38.8; total, 26.2; from cerebro-spinal fever, 2; typhoid fever, 11; malarial fevers, 11; acute lung diseases, 57; consumption, 74; cholera infantum, 54; cancer, 9.

MARYLAND.—Baltimore, 541,000—78,000 colored: Total deaths, 781—210; death rates, white, 14.8; colored, 32.3; total, 17.3; from typhoid fever, 7; diphtheria, 9; acute lung diseases, 134; consumption, 80; cancer, 22.

MASSACHUSETTS.—Boston, 555,057. Report for March: Total deaths, 1,434; death rate, 31.0; deaths under five years, 377; from typhoid fever, 11; measles, 16; scarlet fever, 18; whooping-cough, 13; diphtheria and croup, 42; acute lung diseases, 364; consumption, 149; cancer, 31.

MICHIGAN.—The secretary of the State Board reports for the month of June, 1900, compared with the average for June in the 14 years, 1886-99, measles was more prevalent, and remittent fever, erysipelas, pneumonia, intermittent fever, consumption, whooping-cough and cholera morbus were less prevalent. Including reports by regular observers and others, *consumption* was reported present at 172 places; *measles* at 155 places; *scarlet fever* at 97 places; *typhoid fever* at 52 places; *diphtheria* at 44 places; *whooping-cough* at 44 places; *cerebro-spinal meningitis* at 10 places, and *smallpox* at 10 places.

Reports from all sources show *consumption* reported at 5 places more; *measles* at 78 places less; *scarlet fever* at 49 places less; *typhoid fever* at 2 places less; *diphtheria* at 14 places less; *whooping-cough* at 2 places less; *cerebro-spinal meningitis* at 4 places less, and *smallpox* at 4 places less than in the preceding month.

The number of deaths reported to the Secretary of State during the month of June was 2,293—515 less than for the previous month, and represents a death rate of 11.7 per 1,000 population, as compared with 13.8 for May. Deaths of infants under one year of age, 158; from one to four, 390. Deaths from pulmonary consumption, 149; other forms of tuberculosis, 44; typhoid fever, 31; diphtheria and croup, 25; scarlet fever, 15; measles, 25;

whooping-cough, 21; pneumonia, 152; diarrhœal diseases of children, 82; cerebro-spinal meningitis, 31; influenza, 18; puerperal septicæmia, 15; cancer, 106; accidents and violence, 174; from smallpox, 1—in Springwells township.

MINNESOTA.—Minneapolis, 240,000. Report for May: Total deaths, 202; death rate, 8.55; deaths under five years, 47; from diphtheria, 5; scarlet fever, 1; typhoid fever, 6; smallpox, 4; acute lung diseases, 21; consumption, 29; cancer, 18.

St. Paul, 200,000. Report for May: Total deaths, 100; death rate, 6.0; deaths under five years, 22; from typhoid fever, 2; scarlet fever, 1; diphtheria and croup, 2; acute lung diseases, 15; consumption, 18; cancer, 5.

MISSOURI.—St. Louis, 540,000—37,000 colored. Report for May: Total deaths, 784; death rate, 14.5; deaths under five years, 194; from measles, 15; scarlet fever, 9; croup and diphtheria, 31; typhoid fever, 4; cerebro-spinal fever, 2; acute lung diseases, 114; consumption, 89; cancer, 30.

NEW JERSEY.—Hudson County, 398,960. Report for May: Total deaths, 608; death rate, 18.3; deaths under five years, 202; from smallpox, 1; scarlet fever, 4; croup and diphtheria, 22; typhoid fever, 4; acute lung diseases, 96; consumption, 74.

Newark, 250,000. Report for four weeks ending June 30: Total deaths, 340; death rate, 17.6; deaths under five years, 156; from diphtheria, 11; scarlet fever, 5; typhoid fever, 2; acute lung diseases, 36; consumption, 42.

Twenty-third Annual Report of the State Board of Health and Report of the Bureau of Vital Statistics, for the fiscal year ending June 30, 1899:

Marriages, 13,336; births, 29,419—showing marked decrease, due to the inefficiency of the system for the collection of birth returns, for the betterment of which legislation is in process. Deaths, 30,999—10,357 under five years of age. Death rate (on estimated population, 1,855,872), 16.70. Deaths from the chief preventable diseases: Typhoid fever, 486; remittent fever, 96; scarletina, 187; measles, 96; whooping-cough, 282; diphtheria, 777; erysipelas, 88; diarrhœal diseases of children, 3,568; consumption, 3,584. Other prevalent causes: Acute lung diseases, 4,322; brain and nervous diseases of children, 1,954; diseases of circulatory system, 2,842; renal and cystic diseases, 1,925; brain

and nervous diseases of adults, 2,842; digestive and intestinal diseases of adults, 1,556; cancer, 946; acute rheumatism, 73; puerperal diseases, 267.

Sixty-four cases of smallpox were reported during the year, but no death from it. With reference to vaccination: there were 94,481, or 21 per cent., unvaccinated in 1896; 102,292, or 22 per cent., unvaccinated in 1897; 106,879, or 22.67 per cent., unvaccinated in 1898; and 114,433, or 24.68 per cent., unvaccinated in 1899.

The leading subjects of sanitary work and administration during the year have been the Protection of Water Supplies; Local Cleanliness; Notification of Communicable Diseases; Sanitation of the Milk Supply; Suppression of Traffic in Diseased Meat and other impure food, and the promotion of health by sewage disposal.

County and town reports, severally, indicate thorough organization of the sanitary service. Laws and ordinances are appended, indicative of intelligent legislation for the promotion of the public health.

OHIO.—Thirteenth Annual Report of the State Board of Health, for the year ending October 31, 1898.—The delay in presenting this report has been due to the time required in preparing the special report upon the Maumee and Sandusky rivers: The Investigation of Rivers, begun in 1897, and the new systems of water supply and sewerage, being the leading subjects of sanitary administration during the period.

Epidemic diseases, except smallpox, have been less prevalent than ordinarily, and of markedly mild character.

The total number of deaths reported from all causes—excluding premature and still-births—by the cities, villages and townships represented in the foregoing tables was 29,346—6,817 (exclusive of premature and still-born) under five years of age. The average estimated population of the cities, villages and townships represented was 2,705,126, which is equal to an annual death rate of 10.85 per thousand living population represented.

The deaths in 2,141,781 living population (estimated) in 1897 were 26,215, equal to an annual death rate of 12.24 per thousand; while in 1896 the total number of deaths reported in 1,753,992 population (estimated) was 23,794, equal to a mortality rate of 13.57 per thousand.

Deaths reported from zymotic diseases, 4,997—17 per cent. of the deaths reported from all causes.

"Smallpox has appeared in Cincinnati and in Cleveland. It is impossible at this time, October 31, 1898, to report fully upon the epidemic. The disease has become so widespread, its character is so mild, giving rise to mistakes in diagnosis, that there is every reason to fear a general epidemic." Which has prevailed, as shown by abstracts from the quarterly bulletins under this head for the past three years.

The State Board of Health has been active in its efforts to suppress the disease. All local health authorities have been notified of the danger and have been warned to be on the lookout for suspicious cases, and especially suspicious cases of *chicken-pox*. General vaccination has been urged through all possible channels. With but few exceptions each community in which smallpox has appeared has been visited by the secretary of this Board, or one of its members, and every possible assistance given to the local authorities in preventing the disease.

Cleveland, 395,000. Report for the year 1899: Total deaths, 5,556; death rate, 14.06; deaths under five years, 1,996; from typhoid fever, 119; scarlet fever, 36; croup and diphtheria, 118; cerebro-spinal fever, 32; acute lung diseases, 679; consumption, 176; cancer, 184.

Report for the month of May: Total deaths, 527; death rate, 14.0; deaths under five years, 195; from typhoid fever, 22; scarlet fever, 3; smallpox, 3; croup and diphtheria, 5; acute lung diseases, 102; consumption, 48; cancer, 20.

PENNSYLVANIA.—Philadelphia, 1,266,632. Report for five weeks ending June 30: Total deaths, 2,260; death rate, 18.5; deaths under five years, 695; from typhoid fever, 44; scarlet fever, 17; croup and diphtheria, 83; acute lung diseases, 198; consumption, 236; cancer, 82.

Pittsburg, 320,000: Report for four weeks ending June 30: Total deaths, 472; death rate, 19.1; deaths under five years, 235; from croup and diphtheria, 7; scarlet fever, 4; typhoid fever, 10; acute lung diseases, 42; consumption, 28; cancer, 16.—July 11: Typhoid fever appears to have started again. Sixteen new cases of the disease were reported to the Pittsburg Health Bureau today, the largest number for any single day for some time.

SOUTH CAROLINA.—Charleston, 65,165—36,295 colored. Re-

port for the week ending June 30: Total deaths, 36—25 colored; death rates, white, 19.8; colored, 35.8; total, 28.7; deaths under five years, 12—11 colored; from typhoid fever, 2; whooping-cough, 1; malarial fevers, 2; diarrhœal diseases, 2; pneumonia, 1.

UTAH.—Salt Lake City, 70,000. Report for May: Total deaths, 44; death rate, 7.54; deaths under five years, 12; from zymotic diseases, 5; diphtheria, 2; acute lung diseases, 5; consumption, 1.

WASHINGTON.—Seattle, 90,000. Report for May: Total deaths, 74; death rate, 9.86; deaths under five years, 6; from typhoid fever, 2; acute lung diseases, 19; consumption, 7; cancer, 5.

WISCONSIN.—Milwaukee, 285,000. Report for May: Total deaths, 373; death rate, 15.4; deaths under five years, 149; from croup and diphtheria, 10; scarlet fever, 5; typhoid fever, 3; acute lung diseases, 53; consumption, 44; cancer, 12.

CITY OF MEXICO, 344,377.—Bulletin for the month of March: Total number of deaths, 1,722; from typhus fever, 35; smallpox, 40; tuberculosis, 181; pneumonia, 228; other lung diseases, 188; diarrhœal diseases, 254; cirrhosis of the liver, 48; meningitis, 49; apoplexy, 34; heart disease, 59; alcoholism, 25; from other causes, 1 to 21, 581. Annual death rate per 1,000 population, 60.

BUENOS AIRES, 802,745.—Report for April: Total deaths, 1,104; deaths under five years, 414; from diphtheria, 14; scarlet fever, 20; smallpox, 5; bubonic pest, 11; typhoid fever, 20; acute lung diseases, 130; consumption, 96; cancer, 59.

UNCERTAINTY OF DEATH CERTIFICATES.

Even in Massachusetts ("Boston Medical and Surgical Journal," June 7), in the rural districts particularly, bad spelling and bad chirography are not confined to prescription writing. Certificates of death come in for their share, and when State documents continue to be crammed with errors it is hardly reasonable to expect more of town reports.

The following curiosities are to be found in the reports of a dozen town officials in their reports of 1899, as causes of death: Intra menruged hemorrhage, athenma, focal impostin, cataubalis epidemicus, multiple garamati, embalesue, septic eudocudtis, osteo

myelitis of ilicium, puerferal eclamprice, intescrantal tumor, condylamotor, chronic cyndocarolitis, iliaculitis, hypithiticial suicide, spina befoilo.

THE DEATH RATE AMONG INSURED AND UNINSURED CHILDREN.

Here is the experience of the Metropolitan Life, compared with the census experience of the death rate in childhood, as given by Haley Fiske, before the Ohio Senate Committee, a few weeks ago. The facts are an unanswerable argument to objectors to child insurance. Mr. Fiske says:

"Farr's table is taken as the best table of general mortality, but comparison with the United States census of 1800 shows the same.

"Farr's Table, 65.59 per thousand die at the age of two; in our experience the figure is only 49.37. Age three, Farr's Table, 36.13; in our experience, 32.01. Age four, Farr, 24.59; ours, 21.53. Age five, Farr, 17.92; ours, 16.07. Age six, Farr, 13.53; ours, 11.61. Age seven, Farr, 10.75; ours, 9.64. Age eight, Farr, 9.18; ours, 7.94. Age nine, Farr, 7.69; ours, 6.55. Age ten, Farr, 6.56; ours, 5.47. Why is that? It is, to my mind, a really glorious thing. It is a glorious thing to think and know that the workingmen of this country take care of their children. It proves more than that; it proves that these workingmen who are thrifty enough to take out insurance are the men careful of their families; it proves more—that the selection of industrial insurance is among the best classes of the working people. Four years ago I came here to make an address before a commission consisting of three men, one of whom was the Attorney-General, and another the Commissioner of Insurance, who were devising an insurance code. One of these gentlemen said: 'You are talking to a prejudiced man; I am against you; that is, my wife is against you. I don't know anything about it.' I read that table and commented on it and gave him the actual facts, and at the end he brought his fist down on the table and said, 'There is no answer to those facts.' "

Of course there is not. One fact is worth a dozen theories.—"Insurance Monitor."

ABSTRACT OF MORTALITY REPORTS ABROAD FOR THE FIRST QUARTER, 1900.

☞Abbreviations: tm—total mortality; dr—death rate per 1,000 of population, per annum; v—variola (smallpox); m—measles; s—scarlet fever; tf—typhoid fever; d—diphtheria; w—whooping-cough; dd—diarrhœal diseases; bp—bronchitis and pneumonia; pc—pulmonary consumption.

London, 4,589,120: tm, 26,513; dr, 23.1; v, 1; m, 602; s, 85; tf, 204; d, 547; w, 518; dd, 377; bp, 6,828; pc, 2,388.

Glasgow, 743,969: tm, 5,098; dr, 27.4; m, 183; s, 70; tf, 39; d, 66; w, 96; dd, 96; bp, 1,594.

Liverpool, 634,780: tm, 4,977; dr, 31.4; v, 2; m, 40; s, 38; tf, 26; d, 48; w, 218; dd, 40.

Manchester, 548,768: tm, 3,632; dr, 26.5; m, 84; s, 28; tf, 18; d, 31; w, 118; dd, 41; bp, 1,002; pc, 332.

Birmingham, 519,610: tm, 3,367; dr, 25.9; m, 46; s, 17; tf, 49; d, 24; w, 115; dd, 33.

Leeds, 431,287: tm, 2,538; dr. 23.6; v, 1; m, 43; s, 5; tf, 17; d, 73; w, 95; dd, 8.

Sheffield, 365,922: tm, 2,272; dr, 24.9; m, 99; s, 19; tf, 17; d, 166; w, 14; dd, 9.

Belfast, 359,000: tm, 2,377; dr, 26.5; m, 14; s, 5; tf, 43; d, 16; w, 53; dd, 27; bp, 786; pc, 399.

Dublin, 349,594: tm, 3,451; dr, 39.5; m, 62; s, 9; tf, 26; d, 27; w, 19; dd, 45; bp, 228; pc, 409.

Bristol, 324,973: tm, 1,509; dr, 18.6; m, 47; s, 8; tf, 18; d, 23; w, 11; dd, 17.

Edinburgh, 302,262: tm, 1,796; dr, 23.8; v, 2; m, 5; s, 11; tf, 11; d, 17; w, 24; dd, 35; bp, 479; pc, 148.

Bradford, 291,535: tm, 1,530; dr, 20.9; m, 51; s, 33; tf, 19; d, 7; w, 8; dd, 3.

Nottingham, 242,656: tm, 1,434; dr, 23.6; m, 11; s, 13; tf, 11; d, 11; w, 4; dd, 14.

Hull, 238,736: tm, 1,387; dr, 23.2; v, 14; m, 46; s, 6; tf, 11; d, 5; w, 14; dd, 9.

Newcastle, 234,369: tm, 1,316; dr, 22.5; m, 14; s, 5; tf, 6; d, 7; w, 44; dd, 3.

Salford, 220,816: tm, 1,641; dr, 29.7; m, 73; s, 18; tf, 11; d, 17; w, 101; dd, 22.

Leicester, 219,169: tm, 1,071; dr, 19.5; m, 77; s, 15; tf, 6; d, 68; w, 30; dd, 3.

Portsmouth, 194,955: tm, 1,034; dr, 22.5; m, 1; s, 5; tf, 2; d, 28; w, 50; dd, 8.

Cardiff, 194,247: tm, 748; dr, 15.4; v, 1; m, 57; s, 4; tf, 5; d, 21; w, 11; dd, 1.

Brighton, 124,148: tm, 641; dr, 20.7; s, 6; tf, 2; d, 15; w, 1; dd, 3.

Norwich, 114,855: tm, 701; dr, 24.5; tf, 2; d, 4; w, 31; dd, 2.

Plymouth, 102,161: tm, 651; dr, 25.4; m, 26; s, 1; tf, 3; d, 3; w, 2; dd, 5.

Brussels, 561,130: tm, 2,617; dr, 18.8; m, 10; s, 6; tf, 35; d, 15; w, 19; dd, 187; bp, 591; pc, 293.

Amsterdam, 523,743: tm, 2,761; dr, 20.8; m, 1; s, 2; tf, 47; d, 7; w, 42; dd, 15; bp, 630; pc, 285.

Rotterdam, 320,991: tm, 1,996; dr, 24.9; m, 22; s, 7; tf, 47; d, 28; w, 17.

Hague, 205,328: tm, 985; dr, 19.1; m, 14; s, 2; tf, 3; d, 5; w, 2.

Paris, 2,511,629: tm, 14,939; dr, 23.8; v, 12; m, 253; s, 37; tf, 233; d, 67; w, 40; dd, 382; bp, 2,408; pc, 2,727.

Lyons, 488,719: tm, 3,318; dr, 27.2; v, 15; m, 43; s, 3; tf, 15; d, 16; w, 3; dd, 103; bp, 1,066; pc, 491.

Bordeaux, 266,906: tm, 1,702; dr, 265; m, 32; s, 2; tf, 10; d, 31; w, 11; dd, 49; bp, 297; pc, 143.

Lille, 222,759: tm, 1,499; dr, 29.9; m, 31; s, 1; w, 6; dd, 149; bp, 322; pc, 228.

St. Etienne, 135,784: tm, 1,049; dr, 30.9; m, 6; s, 2; tf, 5; d, 11; w, 1; dd, 26; bp, 297; pc, 136.

Roubaix, 124,447: tm, 774; dr, 24.8; m, 22; s, 1; tf, 5; d, 7; w, 2; dd, 60; bp, 229; pc, 113.

Nice, 144,421: tm, 843; dr, 29.6; v, 18; m, 9; tf, 8; d, 11; w, 5; dd, 27; bp, 197; pc, 76.

Havre, 119,470: tm, 950; dr, 31.8; s, 1; tf, 11; d, 1; w, 1; dd, 61; bp, 448; pc, 167.

Reims, 107,709: tm, 696; dr, 26.0; m, 2; s, 1; tf, 13; d, 5; w, 27; dd, 25; bp, 141; pc, 106.

Nancy, 99,012: tm, 607; dr, 24.5; m, 2; s, 1; d, 3; w, 3; dd, 32; bp, 112; pc, 72.

Dunkirk, 39,718: tm, 251; dr, 25.3; m, 13; s, 1; tf, 2; w, 4; dd, 14; bp, 52; pc, 35.

Pau, 33,072: tm, 275; dr, 33.3; d, 3; w, 2; dd, 8; bp, 56; pc, 30.

Berlin, 1,607,605: tm, 8,840; dr, 20.0; m, 88; s, 407; tf, 17; d, 457; dd, 453; bp, 1,353; pc, 1,316.

Hamburg, 691,349: tm, 3,367; dr, 19.4; v, 1; m, 12; s, 18; tf, 3; d, 19; w, 18; dd, 45; bp, 731; pc, 416.

Munich, 463,000: tm, 3,256; dr, 28.1; m, 291; s, 3; tf, 9; d, 22; w, 12; dd, 325; bp, 483; pc, 409.

Leipzig, 439,233: tm, 1,802; dr, 17.1; m, 7; s, 11; tf, 9; d, 35; dd, 114; bp, 254; pc, 56.

Breslau, 406,461: tm, 2,714; dr, 26.7; m, 18; s, 2; tf, 9; d, 13; w, 20; dd, 237; bp, 437; pc, 429.

Dresden, 401,400: tm, 1,720; dr, 17.1; m, 11; s, 2; tf, 2; d, 17; w, 29; dd, 82; bp, 233; pc, 269.

Cologne, 366,000: tm, 2,197; dr, 24.3; m, 92; s, 8; tf, 1; d, 18; w, 32; dd, 70; bp, 299; pc, 250.

Frankfort-on-the-M., 257,056: tm, 1,278; dr, 19.9; m, 19; s, 6; d, 14; dd, 60; bp, 254; pc, 196.

Hanover, 241,106: tm, 1,078; dr, 17.9; s, 5; d, 11; dd, 23; bp, 252; pc, 144.

Magdeburg, 225,598: tm, 1,190; dr, 20.7; m, 1; s, 25; tf, 1; d, 26; dd, 42; bp, 238; pc, 138.

Nuremberg, 217,512: tm, 1,410; dr, 25.9; m, 22; s, 5; tf, 2; d, 16; dd, 57; bp, 332; pc, 193.

Dusseldorf, 205,056: tm, 1,107; dr, 21.6; m, 13; s, 3; tf, 1; d, 20; dd, 27; bp, 216; pc, 113.

Charlottenburg, 183,270: tm, 741; dr, 16.2; m, 2; s, 22; tf, 2; d, 17; dd, 35; bp, 192; pc, 60.

Chemnitz, 181,243: tm, 1,027; dr, 22.7; m, 11; tf, 2; d, 9; dd, 14; bp, 93; pc, 110.

Stettin, 164,031: tm, 947; dr, 23.1; m, 3; s, 5; tf, 6; d, 17; dd, 40; bp, 143; pc, 110.

Stuttgart, 166,417: tm, 814; dr, 20.8; s, 6; tf, 2; d, 18; dd, 32; bp, 197; pc, 94.

Altona, 154,164: tm, 905; dr, 23.5; m, 4; s, 2; tf, 2; d, 3; dd, 52; bp, 201; pc, 103.

Bremen, 151,749: tm, 782; dr, 20.6; m, 9; tf, 2; d, 3; dd, 17; bp, 174; pc, 123.

Elberfeld, 151,657: tm, 824; dr, 22.4; s, 51; tf, 4; d, 21; dd, 22; bp, 228; pc, 72.

Strasburg, 147,009: tm, 816; dr, 22.2; m, 2; s, 3; tf, 3; d, 10; dd, 98; bp, 177; pc, 103.

Barmen, 136,938: tm, 682; dr, 19.9; m, 27; s, 10; tf, 4; d, 12; dd, 51; bp, 196; pc, 82.

Aix-la-Chapelle, 134,196: tm, 842; dr, 25.4; tf, 1; d, 22; dd, 12; bp, 234; pc, 83.

Dantzig, 130,431: tm, 1,171; dr, 35.9; m, 74; s, 2; tf, 5; d, 19; dd, 57; bp, 279; pc, 108.

Hallé, 129,717: tm, 633; dr, 20.3; s, 10; tf, 3; d, 8; dd, 27; bp, 95; pc, 66.

Brunswick, 128,354: tm, 628; dr, 19.6; m, 2; tf, 1; d, 9; dd, 12; bp, 149; pc, 92.

Essen, 112,496: tm, 721; dr, 25.6; m, 14; s, 45; tf, 3; d, 13; dd, 35; bp, 229; pc, 83.

Crefeld, 108,959: tm, 544; dr, 20.0; s, 6; tf, 1; d, 12; dd, 14; bp, 136; pc, 47.

Mayence, 79,607: tm, 470; dr, 23.6; m, 2; d, 5; dd, 12; bp, 96; pc, 77.

Metz, 58,987: tm, 288; dr, 19.6; tf, 1; dd, 8; bp, 71; pc, 33.

Berne, 55,472: tm, 373; dr, 26.9; s, 1; tf, 1; d, 14; w, 18; dd, 15; bp, 64; pc, 58.

Bâle, 104,724; tm, 498; dr, 19.6; v, 1; m, 4; tf, 1; d, 8; w, 5; dd, 19; bp, 100; pc, 94.

Geneva, 90,708: tm, 508; dr, 22.4; v, 3; tf, 1; d, 4; w, 4; dd, 8; bp, 89; pc, 80.

Lausanne, 44,266: tm, 210; dr, 19.0; v, 1; d, 3; w, 3; dd, 4; bp, 32; pc, 15.

Zurich, 161,726: tm, 744; dr, 18.4; m, 67; s, 2; d, 3; w, 2; dd, 37; bp, 134; pc, 83.

Chaux-de-Fonds, 32,554: tm, 129; dr, 15.9; s, 1; d, 2; dd, 4; bp, 21; pc, 18.

Vienna, 1,639,811: tm, 9,060; dr, 22.1; m, 165; s, 38; tf, 27; d, 88; w, 44; dd, 505; bp, 1,811; pc, 1,610.

Buda-Pesth, 669,120: tm, 2,781; dr, 22.6; m, 34; s, 48; tf, 21; d, 56; w, 15; dd, 126; bp, 653; pc, 658.

Prague, 385,952: tm, 2,041; dr, 21.2; m, 8; s, 42; tf, 6; d, 13; w, 46; dd, 48; bp, 270; pc, 386.

Trieste, 167,578: tm, 1,490; dr, 35.6; m, 18; s, 12; tf, 7; d, 18; w, 15; dd, 30; bp, 404; pc, 195.

Lemberg, 142,280: tm, 1,127; dr, 31.7; m, 3; s, 1; tf, 12; d, 2; bp, 213; pc, 281.

Brunn, 104,808: tm, 674; dr, 25.7; m, 4; s, 3; tf, 5; d, 7; w, 6; bp, 74; pc, 162.

Cracow, 84,869: tm, 717; dr, 33.8; v, 14; s, 10; tf, 8; d, 7; w, 4; dd, 24; bp, 93; pc, 195.

Pilsen, 67,218: tm, 307; dr, 18.9; m, 11; s, 3; d, 2; bp, 29; pc, 58.

Lintz, 53,145: tm, 431; dr, 32.4; m, 15; s, 1; tf, 5; d, 10; w, 1; bp, 25; pc, 94.

Gratz, 125,287: tm, 969; dr, 30.9; m, 4; s, 2; tf, 4; d, 3; w, 9; bp, 123; pc, 146.

Copenhagen, 349,000: tm, 1,939; dr, 22.0; m, 2; s, 17; tf, 4; d, 33; w, 21; dd, 45; bp, 265; pc, 252.

Stockholm, 291,580: tm, 1,388; dr, 19.0; v, 1; m, 1; s, 8; d, 57; w, 3; dd, 55; bp, 282; pc, 214.

Gothenburg, 125,798: tm, 609; dr, 19.4; v, 4; m, 18; s, 5; tf, 1; d, 2; w, 14; dd, 24; bp, 77; pc, 123.

Christiania, 221,256: tm, 1,024; dr, 18.5; m, 4; s, 10; tf, 1; d, 5; w, 31; dd, 55; bp, 138; pc, 188.

St. Petersburg, 1,132,677: tm. 8,342; dr, 29.5; v, 57; m, 187; s, 218; tf, 243; d, 364; w, 58; dd, 639; bp, 371; pc, 1,102.

Moscow, 1,023,817: tm, 6,870; dr, 26.9; v, 20; m, 104; s, 146; tf, 40; d, 190; w, 46; dd, 638; bp, 228; pc, 830.

Odessa, 426,500: tm, 2,116; dr, 19.8; v, 23; m, 22; s, 27; tf, 22; d, 28; w, 5; dd, 80; pc, 314.

Venice, 172,491: tm, 1,072; dr, 24.9; tf, 6; d, 22; w, 1; dd, 57; bp, 261; pc, 81.

Bucharest, 282,071: tm, 1,850; dr, 26.2; m, 1; s, 26; tf, 15; d, 52; w, 7; dd, 49; bp, 412; pc, 249.

Jassy, 70,065: tm, 535; dr, 30.5; s, 1; tf, 5; dd, 23; bp, 37; pc, 61.

For the Fourth Quarter, 1899:

Marseilles, 447,344: tm, 3,678; dr, 32.9.

Nantes, 125,757: tm, 652; dr, 20.8; m, 12; tf, 8; d, 3; dd, 36; bp, 88; pc, 118.

Limoges, 77,703: tm, 458; dr, 23.6; tf, 11; d, 2; w, 1; dd, 30; bp, 54; pc, 89.

Besançon, 58,010: tm, 248; dr, 17.0; tf, 3; dd, 8; bp, 39; pc, 28.

Trieste, 167,578: tm, 1,241; dr, 29.6; m, 15; s, 32; tf, 13; d, 51; w, 7; dd, 55; bp, 192; pc, 173.

Debreczin, 61,300: tm, 446; dr, 29.1; m, 57; tf, 5; d, 5; w, 1; pc, 43.

Presburg, 53,200: tm, 399; dr, 29.9; m, 4; tf, 5; d, 2; w, 1; dd, 1; pc, 33.

Warsaw, 601,480: tm, 3,537; dr, 23.5; v, 69; m, 145; s, 105; tf, 49; d, 59; w, 31; dd, 358; bp, 700; pc, 390.

Naples, 565,527: tm, 3,287; dr, 23.2; m, 16; s, 2; tf, 17; d, 14; w, 2; dd, 275; bp, 728; pc, 283.

Turin, 344,203: tm, 1,455; dr, 16.9; m, 18; tf, 27; d, 5; w, 5; dd, 75; bp, 197; pc, 201.

Genoa, 221,589: tm, 1,277; dr, 23.1; m, 41; tf, 15; d, 7; dd, 90; bp, 287; pc, 132.

Florence, 199,080: tm, 983; dr, 19.8; m, 1; s, 5; tf, 14; d, 4; dd, 72; bp, 134; pc, 109.

Milan, 494,486: tm, 2,030; dr, 16.4; m, 12; s, 1; tf, 60; d, 33; w, 4; dd, 106; bp, 442; pc, 222.

Bologne, 154,234: tm, 876; dr, 22.7; m, 1; tf, 15; d, 4; w, 4; dd, 81; bp, 154; pc, 64.

Brescia, 71,976: tm, 472; dr, 26.2; tf, 12; d, 6; dd, 78; bp, 103.

Bilboa, 74,142: tm, 553; dr, 29.8; v, 7; m, 6; s, 4; tf, 13; d, 11; w, 3; dd, 16; bp, 135; pc, 90.

Cairo, 534,677: tm, 4,387; dr, 32.8; v, 16; m, 16; tf, 75; d, 57; w, 3; dd, 705; bp, 902; pc, 286.

Alexandria, 273,563: tm, 1,916; dr, 28.0; v, 4; tf, 16; d, 13; w, 2; dd, 522; bp, 281; pc, 137.

Damietta, 31,285: tm, 193; dr, 24.7; m, 1; tf, 2; dd, 36; bp, 24; pc, 2.

Port Said, 30,773: tm, 200; dr, 26.0; tf, 2; d, 4; dd, 43; bp, 46; pc, 15.

BOOK REVIEWS.

TWENTIETH ANNUAL REPORT OF THE UNITED STATES GEOLOGICAL SURVEY, 1898-99. CHARLES D. WALCOTT, DIRECTOR. Part IV. HYDROGRAPHY. F. H. NEWELL, Chief of Division. 4to. Pp. 660, with numerous maps and other illustrations. Department of the Interior. Washington: Government Print.

An elaborate, though condensed, report of progressive work, giving the description and results of measurements of the flow of various streams in different parts of the United States; the data being presented in diagrammatic forms and statistical tables. The arrangement is geographical, beginning in the extreme northeastern part of the United States and ending in the extreme southwestern. Besides the extensive measurements and computations made under his own direction, the author of the report comprehends a considerable amount of data concerning stream flow obtained from various other sources: particularly from reports and papers by the engineer officers of the Army; and from individuals

and corporations independently prepared. "The great body of facts, however, are those resulting from the field work of the hydrographers of the Geological Survey or from engineers co-operating with them."

Appended is a special report, of seventy-five pages, on the Hydrography of Niagara, by Arthur Powell Davis, who was detailed to the Niagara Canal Commission of the Department of State, as expert in hydrographic investigations, December 5, 1897, and devoted nearly a year to the work. His report, like the body of that of which his forms an important part, is made with great particularity of plan and details and rendered lucid by maps, diagrams and statistics.

Altogether, the volume is one of great practical utility on the measure of stream flow, reservoirs and the conservation of water generally.

WATER RESOURCES OF THE LOWER PENINSULA OF MICHIGAN, by ALFRED C. LANE. Washington: Government Print.

A pamphlet of ninety-seven pages, illustrated with several maps and diagrams, being one of the series of Water-Supply and Irrigation Papers, in process of publication in the Division of Hydrography, United States Geological Survey.

It opens with a chapter on the various uses of water and lays emphasis on the common error of regarding water supplies inexhaustible, and refers to "many parts of the United States formerly as well watered as Michigan where there has been apparently a shrinkage of water supply. The streams which at one time carried considerable volumes of water throughout the year are now reported to be, during summer at least, nearly dry. Flowing wells have failed in many regions, either from faulty construction or from the multiplication of deep borings. In order, therefore, that it may be possible not only to utilize the water resources of the area under discussion to the fullest possible extent, but also to guard against causes of failure, it is desirable to bring together all of the information available, combining the facts and drawing broad conclusions." This well-defined purpose appears to be effectually accomplished in succeeding pages, in a manner easily understood and practically useful with reference to quantity, quality and uses. Sources and powers; rainfall and run-off, and its relation to lake level; water power, developed and undeveloped; wells, and the methods of sinking them; geological relations.

REPORT OF WILLIAM L. MOORE, Chief of the Weather Bureau, 1898-99. (In two volumes.) Vol. I, 4to. Pp. 247. Department of Agriculture. Washington: Government Print.

It is divided into three parts. Part I opens with a brief reference to the terrible coast storm, November 26-27, 1898, that entailed a loss of at least 200 lives and many vessels. The loss of life being mostly due to the sailing of the *Portland* from Boston "on time," 6 P. M., despite storm signals that had been flying since 11 A. M., and the complete notification of marine interests of the coming storm. "The disasters of this storm will not soon be forgotten, yet what might have been the record of death and destruction if the harbors of the New England coast had not been filled with hundreds of craft which had sought a safe anchorage on the advices of the Weather Bureau" is painful to contemplate. Of similar benefit the forecast of the Barbados hurricane of September 10, 1898, is referred to. Eighty-three persons were killed and 150 injured at Barbados, and two and a half millions worth of property destroyed. But all the other West India Islands were notified from Washington of its coming, and it was in consequence of that notice that the sailing of the Spanish vessels at San Juan was delayed and escaped the storm, and so saving, in all probability, many lives by the delay. Every seaport that could be reached by telegraph was notified; the vessels remained in harbor, and the hurricane, a very severe one, swept through the Caribbean Sea and the Gulf of Mexico without injuring a single vessel.

The extension of the time limits of the night forecast from thirty-six to forty-eight hours is referred to as having marked an important benefit in the subsequent forecast work of the Bureau.

Frost warnings are shown to have been of great benefit to farmers, orchardists and gardeners. Moreover, acting upon the Weather Service forecast of frost and freezing weather, in the Middle and Gulf States, October 21, 1898, the president of the Louisiana State Board of Health issued the following proclamation, October 22, 1898:

"Whereas, the Weather Bureau reports frost occurring all over the State; and whereas, it is a fact accepted by epidemiologists, that no foci of yellow fever can be established in any place after frost is shown: Therefore be it ordained, that all quarantine restrictions on traffic are hereby removed by the Louisiana State Board of Health, as far as it is concerned."

The establishment of stations and the beginning of observations

in the West Indies forebode great benefit to commerce and agriculture throughout, and particularly in Cuba and Porto Rico, where the arrangements are most complete. As summed up: 322 voluntary meteorological stations were established and equipped during the year. * * * "The publication of the National Climate and Crop Bulletin, Snow and Ice Bulletin, the monthly and weekly Climate and Crop Bulletins of the various stations, and the daily bulletins issued from twenty-one centres, around which the corn, wheat, cotton, sugar and rice stations are grouped, has continued throughout the year without material change."

The principal objects of the Monthly Weather Review are briefly summarized and its practical utility to almost every class of citizens indicated.

Its full presentation of the climatological characteristics monthly, at designated stations so numerous and so well distributed as to well nigh include the contiguous area of the whole country, is shown to be of constant practical utility to all who are interested in medical climatology, agriculture, gardening, engineering, navigation, railroad transportation, and to all students of meteorology for whatever purpose.

Parts II and III are almost wholly statistical, giving a list of observing stations and changes therein during the year 1898, and hourly averages of atmospheric pressure, temperature, and wind from the records of automatic instruments at twenty-eight stations; and monthly and annual meteorological summaries for one hundred and fifty-nine weather bureau stations.

Altogether, the report evinces a great amount of meteorological work under masterful direction, and is replete with practical information to all who would profit by meteorological knowledge.

REPORT OF THE DIRECTOR-GENERAL OF PUBLIC HEALTH (F. Montigambert, F. R. C. S., D. C. L.), of Canada, for the year ending October 31, 1900.

A pamphlet of forty pages, which is, for the most part, a sketch of the progress of bubonic plague during the year; its mode of infection and symptoms; how it is spread; the action of germicides on it, and the action of gaseous disinfectants on the plague bacillus. On the last named subject, experiments are referred to, from which it appears that compressed sulphur dioxide is superior as an aerial disinfectant to either carbolic acid or nitric oxide fumes. But even this, on account of the openness of the houses or huts in which cases of plague have been commonly found, is unreliable

for the destruction of the plague bacilli, though efficacious in killing rats and other vermin, which seem to be regarded as the chief means by which the disease is propagated.

The agency of insects, arachnoids, and myriapods in the spread of infectious diseases is briefly discussed; as also, curative serums and prophylactic inoculations.

With reference to contagious and infectious diseases in Canada, for the period, the Dominion appears to have been singularly free. Smallpox, though widespread abroad and prevalent in the United States, appeared at but two of the Canadian maritime quarantines, and once only at each, Halifax and Grosse Isle, in both cases coming from Russia by way of Batoum on the Black Sea. Considering the attitude of plague, however, needful improvements in the disinfecting appliances are urged for the Grosse Isle station to meet possible contingencies.

PHYSIOLOGICAL, CHEMICAL, PATHOLOGICAL AND BACTERIOLOGICAL LABORATORIES. REED & CARNRICK, 42, 44, 46 Germania avenue and 25, 27, 29 Skillman avenue, Jersey City, N. J.

A pamphlet of twenty pages descriptive of the praiseworthy enterprise of the leading firm of manufacturing chemists in this country, in the manufacture of organic remedies.

The laboratories they have established and have now opened to the medical profession are the outcome, or, rather, development, of the chemical, physiological, bacteriological and pathological work necessary to the production and maintenance of the high standard of their products.

The laboratories are elaborately equipped with the most modern and complete apparatus and instruments, and abundantly supplied with the best reagents for accurate results, in any and all of the scientific investigations involved in the several departments of laboratory work as above named.

The medical profession is invited to favor the firm with their confidence by submitting to it any and all questions requiring scientific investigation for solution.

Directions for preparing specimens for diagnostic purposes are appended, as follows:

SERUM-CULTURE FOR DIPHTHERIA: Place your patient in a good light. If you obtain good view of throat, depress tongue and rub a cotton swab gently but freely against any visible exudate, revolving wire between fingers so as to bring entire surface of

swab in contact with mucous membrane or exudate. In those cases where the exudate is confined to larynx, pass swab back as far as possible and rub against mucous membrane of pharynx and tonsils, avoiding touching the tongue. Withdraw the cotton plug from culture-tube; avoid same coming in contact with fingers or any other substance; insert the swab and rub it gently but thoroughly back and forth over the entire surface of the blood-serum. At least half a minute should be given to this operation, the wire being revolved so as to bring all portions of the swab in contact with the surface of the blood-serum. Do not allow the swab to touch anything but the throat of the patient and the blood-serum, and do not push the swab into the surface or in any way break the surface of the serum. Fresh tubes and swabs can be obtained from the office of the Board of Health. Replace the swab in its tube and the cotton plug in the serum-tube. Mark with name of patient and physician, and send to Reed & Carnrick's laboratory, No. 42 Germania ave., Jersey City, N. J. A prompt, accurate, and confidential report will be forwarded.

URINE should always be collected in absolutely clean vessels or bottles; unless sent in fresh condition, or if sent by mail, a few grains of thymol should be added to keep it in good condition. It is always important to know the amount of urine passed in twenty-four hours, and to get a sample of the mixed twenty-four hours' urine. Mark specimen with date, name of patient, and physician, and specify whether a chemical or bacteriological examination or Ehrlich's diazo test for typhoid fever is desired.

BLOOD: Clean some cover-glasses with soap and water, then with alcohol, and dry them. Wash tip of ear or tip of finger and prick same with needle; wipe away the first drop of blood exudating and place a drop in centre of a cover-glass; cover the latter with a cover-glass; slide them quickly apart, and allow them to dry in the air. Take at least three specimens, six cover-glasses in all, and mail same in a wooden box to laboratory. Mark date, name of patient and physician, or give other mark for identification, and specify plasmodium malariæ, Widal's test, etc.

For counting of red and white corpuscles and hemoglobin estimation, patient should be sent to laboratory, as these examinations must be conducted with absolutely fresh blood.

SPUTUM should be collected in a clean (sterilized) wide-mouthed bottle, and an early-morning specimen should be sent. Mark name of patient and physician, or give other mark of identification.

STOMACH-CONTENTS should be collected in clean (sterilized) wide-mouthed bottles, and specified if after test meal, and give nature of food at last meal.

PUS may be collected on clean cotton, linen, small vial, etc., and sent labeled for identification.

TUMORS may be sent in wide-mouthed bottles or jars, preserved in a two-per-cent. solution of formalin or Miller's fluid, and should rest on a pad of cotton previously put in bottom of jar. Give history briefly, also name of physician or other mark of identification.

The fees are moderate and, with any further information, will be furnished on application.

CONTEMPORARY LITERATURE.

HOW TO AVOID INSANITY.

The following hints on the safeguarding of one's sanity are given in the July "Century" by the Rev. Dr. James M. Buckley, editor of the "Christian Advocate," and author of "Christian Science, and Other Superstitions."

Anxiety should be systematically antagonized by philosophy, religion, or change of subjects of thought. The effect of worry and suspense in driving men wild is constantly seen in the business world, directly and by contrast, for bankruptcy is often followed by comparative mental repose. Hence authorities affirm that uncertainty and anxiety are far more liable to lead to mental derangement than the assurance of disaster.

As anxiety is a foe to clear thinking, it is better for one approaching a crisis to resort to indirect methods of dissipating it, such as conversation, the reading of an absorbing book, violent physical exercise, or the use of tools with which one would cut himself if he did not give his entire attention to their use. Similar means also contribute to sound sleep.

Subjects of thought should be frequently changed. Neither fanaticism nor insanity from mental causes will be liable to develop when the mind is not constantly held upon one problem, probability, possibility, or perplexity.

Surroundings lose their power to withdraw the mind from care and fear, so from time to time the scene should be changed. Those who postpone travel for several years often find that they have

lost the capacity of enjoyment; care is their courier, and they return unrefreshed. A frequent vacation of two or three days in a month would in many cases be more beneficial than thirty-six days of leisure or change consecutively each year.

The observance of one day in seven by a complete change in subjects of thought, and the suspension of modes of activity required for six days, would be philosophical even though it had no basis in religion. In the first French Revolution the attempt was made to have a holiday once in five days, and again once in ten. The intervals were too frequent under the first plan, and did not recur often enough under the second. Hence those who hated the system which enforced the Sabbath were fain to return to it.

The superintendent of one of the largest hospitals for the insane declares that nineteen out of twenty of the business and professional men who come under his care have been in the habit of carrying business on their minds for seven days in each and every week.

Exaggerated sensitiveness is a foe to happiness and the direct source of melancholy. In its earliest stages it is amenable to self-treatment. Many a restoration to happiness has occurred by the revelation to one's self that by undue sensitiveness he has been making life intolerable to himself and to his friends.

Never, except in an emergency, should any one stake all he has upon one thing. *Cæsar aut nihil* is usually nihil, and if Cæsar, it is often only another form of nihil. In great emergencies men are often not content to wait. Because they know not what to do, they do they know not what.

Many become insane for want of occupation; they inherit wealth, and with it a strait-jacket of conventionalities in which they are compelled to spend their lives. This is especially the case with women, who generally, unlike men similarly situated, cannot travel by sea or land, or employ their energies in hunting, fishing, or athletics. Men who retire from business voluntarily or because of advancing years, without modes of mental occupation, are prone to melancholy. Some fear poverty while in the midst of riches; others are out of joint with the times; others develop strange eccentricities, illustrating the proverb, "Give an old mill nothing else to grind and it will grind flint." A habit of reading, an interest in science, active connection with some systematized philanthropy, a profound and practical sympathy with some "religious cult," will postpone the date of the advent of senility.

CUBAN TEACHERS IN THE UNITED STATES.

The hearty co-operation of Secretary of War Root, Governor-General Wood of Cuba, President Eliot, and the authorities of Harvard University, and the general public, promises to make the pilgrimage to this country this summer of 1,450 Cuban teachers, led by Mr. Alexis E. Frye, Superintendent of Education in Cuba, a marked success. The teachers will represent urban and rural Cuba, and be selected by Cuban school officials on the basis of merit. Five army physicians and a number of Cuban women of distinction will accompany the party, the latter to serve as chaperones. Mrs. Alice Gordon Gulick, head of the noted American Board Mission School for Girls, has been secured to act as dean of the women's department. For six and a half weeks the teachers will be the guests of Harvard University, which will furnish not only instruction, but board and lodging—the expense of which has been assumed by the University, relying on the hospitality and generosity of the people of New England to make good the expense incurred, which it is estimated will be $70,000. Systematic instruction in English, physical geography, history (American and Spanish-American), botany, and kindergarten methods will be given, chiefly in Spanish, by the regular teaching staff of Harvard, supplemented by thirty or forty extra teachers who use Spanish freely. Excursions to points of historic interest and to manufacturing establishments will contribute to the enlightenment of the visitors. After the teachers leave Cambridge, they are to visit Niagara Falls, Chicago, Washington, and New York, from which city they will sail home on the Government transports. Nothing that Harvard has done in her long career has been more creditable to her than the work she plans to do this summer for the men and women on whom the future of Cuba so much depends.—From "The Progress of the World," in the "American Monthly Review of Reviews" for July.

STATE CARE OF DEPENDENT CHILDREN.

In an article in the July number of the "North American Review," entitled "State Care of Dependent Children," Miss Henrietta Christian Wright discusses the evils which have always been inseparable from the system of training and educating dependent children in large institutions. Miss Wright also tells how the more natural and more economical system of boarding the chil-

dren out in respectable families originated, and she shows, by facts, and statistics derived from States and countries where it has been extensively adopted, how that system has been justified by its fruits. Referring to the worth of the Philadelphia Children's Aid Society, she says:

"The agent carries away innumerable mental pictures of these little waifs, who have found home and health in the beautiful hill country of Pennsylvania. She sees the children on the benches of the village school, or sharing in the innocent pleasures of childhood in wood and meadow. She finds them in the barn or field with the foster father, picking up useful knowledge, learning ways of industry and honest living, and, above all, sharing the interest of the family as if they were to the manner born. Very often these boarded-out children step into a place left vacant by death, and often they bring to a childless home the first knowledge of the privileges and blessings that come with children. The society has innumerable photographs showing the children in their comfortable homes, studying in the cosy sitting rooms, playing games with the farmer's older boys, or with the farmer himself, and sharing, in fact, in all the simple and sweet scenes of family life."

"THE Provision for Children in Public Libraries" is fully described by Miss Katherine Louise Smith, in the "Review of Reviews" for July. The progress already made in this direction will doubtless be a surprise to most people. The article is accompanied by many pictures showing the rooms set apart for the use of children in various cities throughout the country.

THE "GREAT WRITERS."

Young readers are often afraid of the very best books, says "St. Nicholas" for July. They think there must be something forbidding in writings that have been looked up to for many years, and decide to wait until they are wiser before reading the great authors. Now, Hazlitt says: "The difference between a tall and a short man is only a few inches, whereas they are both several feet high. So a wise or learned man knows many things of which the vulgar are ignorant; but there is a still greater number of things the knowledge of which they share in common with him." A great author will say some things we may not understand, but he will tell us a great many more truths we can share with him.

Few writers of real eminence are obscure in writing; and where there is obscurity, it is not often worth while to labor long to get at the author's meaning. Let your motto in reading be: 'Nothing is too good for me.' "

"MISSIONS AND MISSIONARIES IN CHINA."

This is the subject of a paper in the July number of the "North American Review," in which Mr. Poultney Bigelow gives the results of his personal observation during two visits which he paid to the Chinese Empire. Mr. Bigelow describes the lives and labors of Catholic and Protestant missionaries with whom he came into personal contact, and the influences through which they endeavor to reach the minds and hearts of the people. He gives several vivid illustrations of the savage hatred entertained by the Chinese populace toward Christianity and its adherents, and of the foul misconceptions regarding them which are fostered by those who are interested in maintaining the corruption and oppression to which they are a menace:

"The public misrepresentations of the spirit and aims of the Christian religion and of the objects which animate Christian missionaries in their work are almost incredible. I have before me a specimen of the posters which are from time to time exhibited throughout the country with a view to bring indignation and contempt upon the foreigner. It represents our Savior in the shape of a hog. He is being worshiped by two 'foreign devils,' the one marked 'teacher,' the other 'disciple.' These two are branded with the most insulting epithets known to Chinese vocabulary, notably those indicating lack of sexual virtue. One inscription reads: 'This is the beast which the foreign devils follow. The hog's skin and bristles are still upon him.' Down the left-hand side of the picture and in the middle of the poster are inscriptions which are absolutely too obscene for publication."

MR. R. VAN BERGEN, who is one of the best known authorities on Chinese matters, has an article in the July "Home Magazine" entitled "The Real Situation in China." Mr. Van Bergen, who has lived in Shanghai for the last thirty years, is intimately acquainted with the diplomats in the East and tells in this article the secret history of the diplomatic war which has been going on for some years past and which has now culminated in the uprising of the Boxers and which threatens to involve the whole civilized world in war.

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PURIFICATION OF SEWAGE BY MEANS OF THE SOIL: THE SEWAGE FARM.*

BY GEO. JANIN, A. M. Can. Soc. C. E.

PROTECTION OF WATER SUPPLIES BY THE SUPPRESSION OF THE RIVERS' POLLUTION.

In mentioning the danger of polluting by the sewage of the cities the streams which generally supply drinkable water to these same cities or their surroundings, we must give credit to Great Britain for having first submitted to her scientists the study of this great question, which brought on, in 1878, the vote, by the British Parliament, of the "Rivers' Pollution Prevention Act," obliging the municipalities to practically eliminate the noxious principles of sewage water before emptying it in the streams.

England's example was followed in the whole of Europe, especially in Paris, where the "Roads and Bridges Engineers Corps," to which I had the honor to belong, has made the most marvelous progress in the establishment of purification fields at Gennevilliers and Achères.

Unfortunately, in this country, we do not follow this example, and, boasting of the ampleness and copiousness of our rivers, our municipalities seem to court epidemics, in spite of the advices of their boards of health, and empty their impure sewage in the streams at the bottom of which generally lie deposits or banks of sawdust from the numerous mills lining the shores.

This neglect of the interests of health arises principally from the considerable expenditure anticipated by engineers in estimates based on special methods of treatment for sewage water. If, then, the most practical and cheapest system of sewage farms continued

*Read at the meeting of the Canadian Society of Civil Engineers, Montreal, April 12, 1900.

without any serious inquiry to be declared unsatisfactory and unavailable in our climate, there would be a danger of sewage pollution of streams becoming permanent in this country, to the great detriment of the purity of our water supplies generally.

So as to assist in counteracting this state of things, the author of this paper will endeavor to destroy any prejudice which may still exist against sewage farms among the members of the profession.

Soil purification of sewage is the method now in favor in England, Germany and France. In the last named country I had the honor of coöperating in the installation of this system with the learned engineer, Durand Claye, and his competitor, M. Masson, inspector of the drainage of the city of Paris. This process consists, as you know, in the filtration of sewage water through a permeable soil affording a sufficient thickness and all facilities for the outflow of the purified waters, either by a sufficient porosity of the subjacent stratum or by artificial drainage.

That the soil is the most perfect purifier of waters charged with organic matter is proved, first, by the organic purity of spring water; second, by careful experiments with impure waters, which are subjected to analysis before and after percolation through the soil.

THEORY OF THE PURIFICATION OF SEWAGE POURED ON THE SOIL.

The following information is taken principally from the remarkable report of Mr. Schloesing, reporter of the Health Committee of Paris (France):

When impure water, that of sewers for instance, is spread on light land, the insoluble matter remains on the surface. Some of the more minute portions, however, go a short way down, but soon stop; so that below a depth which varies with the nature of the ground, but which seems never to exceed two or three inches, there are no more solid particles to be found. This is the first effect produced; it is simply a mechanical filtration.

The water, now free from insoluble matter, goes down further, and an extremely thin coating of liquid gathers round each particle of earth. Thus divided, the water offers an enormous surface to the air confined in the ground; and the second effect of irrigation then takes place, *i. e.*, the combustion, by the oxygen in the air, of the organic matter dissolved in the sewage water. This is not a violent and visible phenomenon like fire; it is a slow combustion without any external sign, and which reduces all organic impurities

into carbolic acid, water and nitric acid. This combustion is even more perfect than the other, for it burns up the nitrogen, which fire cannot do.

As to the insoluble matter retained on the surface, it also undergoes slow combustion, especially when ploughing has divided it and incorporated it with the soil. All that remains is a fine sand which will constitute a part of the minerals in the ground.

But how is it then that the oxygen of the air can under these conditions completely consume the organic matter of sewage and nitrify the nitrogen?

According to the researches of Messrs. Schloesing and Muntz, in 1877-1878, this remarkable property is owing to the action of living organisms, existing in vegetable soil as well as in sewage water, and able, like the mycoderma aceti and others, the functions of which Pasteur has so well described, to transport the oxygen of the air on organic matter.

These are the experiments of Mr. Schloesing: If you pour regularly and in small doses sewage water on any kind of sand, mixed with a little humus and placed in a vertical glass tube, you will immediately get in the lower part perfectly pure water containing all the nitrogen of the sewage water in the form of nitric acid or nitrate, according to the nature of the sand.

If for this mixture of sand and humus or arable soil you substitute quartz sand calcined up to red heat, the purification does not take place in the first days, but only after a few weeks, and then, however, as completely as in the first case. The water collected in the lower part of the glass tube is perfectly pure; it contains all the nitrogen of the sewage water under the form of nitric acid.

Further, if, in the second case, and while complete purification is taking place, you send through the glass tube a current of chloroform (experiments of Mr. Muntz), the purifying power ceases completely and resumes only after the sand has undergone a protracted washing.

From these experiments we may draw the following conclusions:

1. That purification by means of sand, free from organic matter, does not take place in the first days of the watering, because the germs of the nitrifying organisms are then non-existent.

2. That these germs can be brought in by sewage water and develop in sufficient quantities within a few weeks, and

3. That in vegetable soil, on the contrary, the purification begins

immediately because the organisms are in full possession of the ground.

The researches of Mr. Muntz indirectly confirm this explanation, for, as chloroform has the property of paralyzing all organisms acting as ferments, the purifying power ceases as long as the action of chloroform lasts.

Let us now see, with regard to practical work, what conclusions we can draw from these scientific notions, to be applied to the choice of land intended for the purification of sewage water. As the action of air is indispensable and the water should get through the soil easily, the latter should as much as possible be light, permeable and be of sufficient thickness above the sheet of liquid and the impermeable stratum. The filtered water should also be able to flow away easily either because the surface of the impermeable stratum offers an easy grade, or else artificially by means of drains. It is absolutely necessary to get rid of the filtered water. It is easy to understand that, if it could accumulate in the same place, the thickness of purifying soil might be diminished and become too slight to secure complete purification.

More or less arable ground, therefore, containing a greater or a smaller proportion of humus, is suitable for purifying sewage water, while assimilating its fertilizing elements. But the poorest land, pure sand even, secures after a short time a purification just as complete, as the sewage water itself furnishes the germs of the same nitrifying organisms as those enclosed in the humus of arable land.

In many documents relative to sewage water, plants are erroneously classed with the soil as purifying agents; the bare soil without any vegetation suffices for complete purification.

Plants live on mineral compounds: carbonic acid, water, ammonia, nitric acid, phosphates, etc., and do not absorb organic substances, or only very small proportions of them.

However, they help purification, but in another way, mechanically as it were. They facilitate and determine in a notable degree the evaporation of the water poured on the ground, and thus contribute to getting rid of the liquids (experiments of Marié-Davy in the municipal garden of Gennevilliers). Besides, they consume a large portion of the ammonia or nitric acid produced, thus removing it from the purified water.

Therefore, as far as purification, strictly speaking, is concerned, cultivation is only of secondary importance; but from the agricul-

tural standpoint this importance is very great, since we can thus make use of all the fertilizing elements contained in sewage water. This is the experiment of Mr. Marié-Davy: Four old stone-work tanks, 33 feet by 26, which had formerly been used for attempts at chemical purification, were filled to a height of 6½ feet, with the average soil of the Gennevilliers' plain. Drainage pipes were placed at the bottom, which like the sides were covered with an impermeable coating. This impure water poured into each tank and the purified water issuing from the drainage pipes were both exactly measured. Different plants such as lucerns, maize, beet roots, corn, etc., were cultivated on the surface of the tanks and weighed with great care at harvest times.

Out of 12,700 cubic yards of liquid introduced per acre in half a year, less than 848 reached a depth of six feet. Generally speaking, Mr. Marié-Davy found that only one-fifteenth of the water poured on the surface reached the lower liquid level.

Vegetation acts therefore as a powerful vertical drainer; the soil transforms the impure water received, oxydates it and produces an excellent liquid manure.

Plants in their turn absorb for their own benefit the useful elements of this manure, and give back to the atmosphere by means of evaporation the greater portion of the liquid which has served as a means of conveyance.

The soil is itself highly enriched by the organic matter which it takes from the sewage, and thus an economical value is given to the method of soil purification. Many analyses of vegetables grown on such soil have been made, and in no case has any diseased or unsafe food product resulted from the use of these fields as market gardens.

Thus, the filtration through the soil and the agricultural utilization complete one another. Not only purification, but also restoration, accomplish themselves, and the system bears out the axiom of the learned English hygienist, Edwin Chadwick: Circulation always; stagnation, never!

In order to demonstrate the harmlessness of this system, it is advisable to quote the opinions and the experiments of a great many scientists, and first to mention the statement made by Dr. Frankland, of the Royal Society, who declares that: "Sewage, even though infected with cholera and typhoid fever, has never, when employed in irrigation, communicated disease either to parties liv-

ing on the land so irrigated or to the consumers of the products thereof."

Here are now some extracts from a remarkable report made to the French Senate in December, 1888, by Mr. Cornil* in a debate concerning the purification of sewage water in Paris:

"There has been much attention directed lately to what becomes of micro-organisms when they pass through permeable soil. With my assistants, MM. Chantemesse and Widal, I have made—and Mr. Grancher on his side has also made—experiments to know what becomes of micro-organisms of a determined kind, easily recognized by its characteristics, poured on the surface of one of these large tubes filled with Gennevilliers soil.

"We have thus placed on the surface of our tubes microbes of typhoid fever, and we have sought if these micro-organisms of typhoid fever passed through the soil and were found in the water collected at the lower part of the tubes. Well, none pass through, even if the experiment is repeated for several weeks. Mr. Grancher repeated it for several consecutive months, and was unable to find even one.

"The soil at a given depth is therefore absolutely impermeable to microbes. This fact has also been confirmed by a series of experiments of another kind.

"When, by means of perforating apparatus, you obtain a sample of earth collected at a depth of one meter and examine it with reference to micro-organisms, none are found. You cannot find any of those which have been sown on the surface of the soil. Therefore, the microbes do not pass into the water of the drains which discharge the liquid poured as sewage water on the surface.

"After having filtered through a meter or a meter and a half of earth, this impure water appears perfectly clean, clear, containing scarcely any micro-organisms, and notably none of those sown on the surface. Thus, if you sow micro-organisms on the surface of soil and collect what issues from the test-tubes, *i. e.*, the drainage pipes, no trace is found of the micro-organisms sown; they have remained on the way, at 30, 40, 50 centimeters below the surface of the ground.

"They are not destroyed, but they are buried, so to speak, and the soil is their cemetery.

"In any case, these experiments in tubes are absolutely conclusive with regard to the clarification of the water.

*Senator and Professor of Microbiology at the Faculty of Medicine of Paris.

"These same experiments were made this year again in tanks at Gennevilliers, which had been used for chemical purification. These tanks are closed, in their lower portion, by an impermeable concrete; they are therefore absolutely watertight and filled with Gennevilliers soil.

"They have a surface of five acres, and a depth similar to that of the soil of the place, *i. e.*, two meters or two meters and a half.

"Sewage water was poured on this soil in considerable quantities for a certain number of days, or even for several months; then the water which had passed to the lower end was successively collected and found to be absolutely pure.

"It was examined in a chemical and bacteriological point of view.

"Chemically it contains very little dissolved matter.

"The quantity of micro-organisms contained in this water varies between 40 and a maximum of 600 per cubic centimeter, while that found in sewage water is 80 to 200,000 per cubic centimeter.

"This water issuing from the Gennevilliers soil does not contain any more micro-organisms than that of the Vanne or the Dhuys.* This results from all the experiments, all the analyses, and specially those made by M. Miquel. There are no more micro-organisms in this matter than in the pure spring water furnished to the inhabitants of Paris."

After having heard the favorable opinion of so many learned men, after having passed through so many successful experiments made in the numerous purification fields of England, France and Germany, how is it that this system needs still to be defended against certain prejudices?

For it must be admitted that despite its superiority it has adversaries. Some are in good faith, but have been misled by imperfect experiments, to which reference will be made later. Others are mere grumblers blindly following their preferences for other systems or directly interested in the working of rival schemes.

Notwithstanding the evident superiority of the soil purification system, it is proper, considering the prejudices still existing, to illustrate, even briefly, the rules regulating the establishment and working of the purification fields—the violation of which rules has caused the few failures of the system.

The purification of sewage by the soil can be accomplished in two different ways:

1st. The simple pouring or the flooding of prairies and heavy crops.

*Rivers supplying water to the City of Paris.

2d. The methodical watering in succession of lands used for intensive gardening.

The largest number of failures recorded can be ascribed to the first method often used in England. For, inspired by a pennywise economy, in order to devote to the pouring the smallest possible surface, this method causing flows of high graded sewage water, cannot easily agree with the rules of the methodical filtering of impure water through the soil. The result frequently is an imperfect purification, and, in any case, a swampy aspect of the flooded fields as well as disagreeable emanations for the neighborhood.

On the contrary, the following rules of the second method are always easy to observe; and their fulfilment is, in nearly all cases, crowned with success.

OPERATION OF THE PURIFICATION THROUGH THE SOIL, WITH THE RULES ORIGINATED FROM SUCH OPERATION.

The operation process of purification through the soil admits of two motions, one of the water, the other of the air.

The motion of the water consists of:

1st. The apportionment of impure waters on the surface of the ground, the filtering through the purifying soil, followed by the combustion of organic matters.

2d. The outflowing of purified waters.

The motion of the air consists of an exchange between the soil and the atmosphere, continuously renewing the oxygenic supply of the soil in proportion as such supply is spent by the combustion of organic matters contained in the water.

Man has an entire control of the motion of water and must regulate its pouring and outflowing according to the purifying power of the soil.

There is evidently a close connection between those two motions and the purifying power of the soil; to wit: The aeration and the movement of the water are really purveyors, while the soil is the instrument of the purification.

To sum up, the rules which govern a good and complete purification are as follows:

First Rule. To select ground porous enough to allow water to easily permeate and to give free access to a sufficient quantity of air for the working out of combustion. This degree of porousness or purifying power is determined by direct experiments, the best known being that of Dr. Frankland, which is as follows:

In a vertical tube 2 meters in length and of 0^m 25 to 0^m 30

diameter, the lower end of which rests on gravel contained in a tank, samples of the different beds of the soil to be tested and placed in the same order in which they exist in the natural ground.

You pour daily on the soil a known and constant volume of sewage water sufficiently small to allow of perfect purification, and that during several weeks. You then pass to a higher daily dose of sewage which you again keep up for several weeks, and so on, increasing the dose constantly until the analysis of the filtered liquids shows that the maximum dose has been reached, beyond which purification is no longer complete.

From this experiment it is easy to conclude what a square meter of the soil tested, and, consequently, what a hectare of it will purify at most per day or per year. We can only deduce from it the time required for purification, *i. e.*, the length of time during which the impure water should remain in the soil before being discharged. It is in days the quotient of the number of litres of water which the soil can hold* by the number of litres of impure water this same soil can purify per day.

By this method Frankland has shown that a cubic meter of pure sand or chalk can purify per day up to 33 litres of London sewage (litre—61.017 cubic inches), and that soil of mixed sand and clay or marl possesses still greater purifying power.

Evidently, in working out these data, we must remember that in practical work on a large scale we cannot realize exactly the conditions it is easy to observe in a small experiment, and that it is therefore desirable to reduce somewhat the maximum doses determined in the laboratory.

Second Rule. To regulate the time of pouring and the quantity of sewage water poured each time, so that the water may take to run through the filtering soil *all* the time necessary for its purification.

Third Rule. To underdrain, if necessary, in order to give to the purified water a regular issue.

In a word, the object is to obtain, as nearly as possible, a continuous and regular distribution since purification, a phenomenon of slow combustion and aeration—a mechanical fact—are both regular and continuous.

Those are, as briefly enunciated as possible, the laws of operation of the purification by arable soil.

It follows of this exposé, as said before, that high dosed pouring

*A number which can easily be experimentally determined by weighing the tube full of dry earth before introducing the water and weighing it again after saturating contents and allowing discharge of liquid surplus.

alone has caused partial failure; not because it is bad in itself, but because the rules of purification by the soil imply certain absolute conditions such as selection of the ground, apportionment of sewage waters, underdraining, which are sometimes neglected on account of difficulties of ascertainment and of the great expenses they entail.

On the contrary, in all cases where irrigation has been moderately practiced and where vegetation has helped purification, by returning to the atmosphere a portion of the purified water, success has been attained. To recall only a few of these successful experiments, I shall quote the purification field of Gennevilliers (Paris), where the annual dose of irrigation amounts to from one to four million gallons per acre; of Reims (France), where the dose is about the same; of Dantzig (Northern Prussia), where the average annual dose is three million gallons; and of Aldershot Camp (England), where the dose is also of about three million gallons per acre. A recent report (1899), made by Her Majesty's order to the Imperial Parliament, by Prof. Fred. W. Andrews, M. D., F. R. C. P., D. P. H., etc., on the working of this sewage farm, the products of which are principally used for dairy purposes, affirms the absolute innocuousness of the system both with regard to odor and to the quality of the milk and butter produced by the animals fed on the yield of the farm. Prof. Andrews says, among other things:

"In concluding these remarks upon the farm, I will say that it appeared to me to be an excellently managed one (by Col. Alf. Jones, V. C., Assoc. M. Inst. C. E.), and as free from objectionable features as any sewage farm could be. I could detect no nuisance at the time of my visit. . . . I am unable to find any conditions on the farm liable to render the milk produced thereon more dangerous for human consumption than that from any other well-managed sewage farm, and I have already stated that no evil results have yet been proved to occur from sewage fed dairy produce as a whole."

Those purification fields not only fill the hygienic programme of complete purification, harmlessness, absence of perceptible emanation for the neighborhood, but also fill the economical programme as in Gennevilliers, where the value of land has increased fourfold since it is irrigated. In Reims, where a company has rented the purification field for a period of thirty-six years, and after paying a heavy annual rental to the city, still realizes large benefits, and in Dantzig, where the purification field is rented at large profits.

The testimony in favor of the system with regard to its already lengthy applications in Europe and the more recent ones in the United States could be multiplied, but it will be preferable not to go beyond the instances already mentioned and to discuss the last and principal objection of the adversaries of the system, *i. e.*, that the severity of Canadian winters would interrupt the work of purification.

Like at Dantzig, where the thermometer registers as many degrees of cold as here, and where the system has been operating uninterruptedly for twenty-five years, it has been working successfully for three years in spite of the Canadian winters at only a few miles from Montreal. The sewage water of St. Laurent College has been successfully undergoing purification since January, 1896. The following extract from the annual report for 1897 of the Board of Health of the Province of Quebec confirms this, and also gives a description of the first sewage farm established in the province. The extract is as follows:

"SEWAGE FARM OF ST. LAURENT COLLEGE.

"As we foretold in our last annual report, we can this year speak by experience of sewage farms in our climate.

"Effectively the St. Laurent College, near Montreal, which discharged its sewage water in a small creek passing through the village, entrusted in the autumn of 1897 the establishment of a farm for distribution and purification of its sewage to Mr. G. Janin, a civil engineer of Montreal, who had formerly taken part in the sanitation works of Paris.

"The works of this farm, which we followed with attention, were finished sufficiently early in the winter, and of January, 1898, to enable us to state that, as we had supposed, the methodical distribution of the sewage had gone on with ease in temperature of more than 20° F. below zero. As there is no reason for supposing that what took place in the severe winter of last year will not equally take place in subsequent winters, we can conclude that it is more proved that sewage farms are perfectly compatible with the climate of the Province of Quebec.

"The sewage farm at St. Laurent College occupies a surface of an acre and a half, and receives at present the sewage water of a population of about five hundred persons, or an average flow of 4,500 gallons of sewage water per twenty-four hours. This sewage formerly was discharged directly into the village ditch, and now passes through a 10-inch earthenware pipe into a 9,000-

gallon tank placed beside the building containing the motive power used for the different requirements of the college.

"This tank is absolutely watertight, and can, in case of need, contain all the sewage water produced in forty-eight hours. A centrifugal pump placed in a well beside the tank, and worked by the ordinary college motive power, raises in about forty minutes the daily amount of sewage, and forces it through an iron duct three inches in diameter, into a distribution canal running along the south side of the farm. In order that, after the pumping has stopped working, nothing of a nature to obstruct may remain in the elevating pipe, it is emptied into the tank as soon as the pumping is over.

"From the distribution canal the sewage is directed at will by means of gates into any one of the twelve longitudinal and five lateral trenches which divide the farm into fifty-five parallelograms of fifty feet in length and twenty feet in width each, on which vegetables, fertilized and watered by the sewage, are cultivated. In the middle of each of these parallelograms there has been placed in porous earthenware pipes of three inches diameter, about four feet below the surface of the ground. This drain collects the sewage water after it has undergone purification in the soil,* and conveys it to a ditch running along the northern side of the farm. This ditch ends in the village creek, into which the unpurified sewage of the college formerly flowed.

"Around the farm large ditches have been opened or regularized in order to let the water of the neighboring ground discharge freely and to prevent it from invading the farm or overloading the underground sheet of water below said farm.

"To hinder the inconvenience resulting from the proximity of the underground sheet of water, which in this low ground is only a few feet below the surface, the level of the ground has been raised by a filling of arable land, from sixteen to eighteen inches in height.

"Not only the sewage farm worked uninterruptedly in winter, as we have said previously, but during the summer the produce has been very satisfactory, although no great efforts were made for cultivation.

"Finally, then, we must note the success of this first application in our climate of a system which works to the advantage of health in the other countries of the old and new continents, and direct to it the attention of our municipalities."

The members of the profession will find the system tried both

*By the oxydation of the organic matter.

more completely and on a larger scale in the sewage farm of St. Denis Ward of this city. The works, which have been entrusted to the writer by the city corporation (under the direction of Mr. P. W. St. George, City Surveyor, and Mr. S. Howard, engineer in charge), have just been concluded. This farm, which covers a surface of about twenty acres, is established approximately on the model of that which has been worked successfully for some time at Brockton, Mass., is divided into regular beds, separated by small earth embankments so as to divide the irrigation according to requirements of cultivation and amount of sewage to be distributed.

The sewage water arrives by gravitation into a well which communicates with two tanks placed beside each other. These tanks can be used in turns; a movable grate in each of them stops the passage of insoluble matter. From the tank the sewage water passes into two parallel earthenware pipes, eighteen inches in diameter, which distribute it by means of earthenware gates on any of the beds when it may be required. At the end of the pipes there exists an overflow arrangement which can spread any surplus water on a large surface of ground, to be devoted for the present to rough cultivation.

The soil has been regularly leveled and subdrained by means of farm tiles covered with a foot of coke. These farm tiles are at about five feet below the surface, and end in an open ditch made of brick which in its turn pours its contents into another ditch, when they finally flow into the Back River.

The soil of the farm is approximately constituted as follows:

1. One foot loam.
2. One foot loam and gravel.
3. Two and one-half feet light clay mixed with sand and gravel.
4. One and one-half feet quicksand.

The impermeable bottom is hard pan. This farm will receive at present the sewage and a portion of the surface water of a district containing actually a population of about 2,000.

To begin working it the only thing now required is the completion of the main sewer which is to convey the sewage to it, and which will be finished at latest next spring.

The writer believes he has now covered all the important points of the subject. He has gone through the theory of purification by the soil, and has given an insight into some of its practical applications in the Old World, the United States and Canada. He believes, therefore, he is fully justified in concluding with the following statement:

A municipality called upon to pronounce on the choice of a system for external sanitation can only proceed on the path followed by all the cities which have had to solve this grave problem by adopting the same sanitation methods. They have been tested and consecrated by long experience, and have given the most complete satisfaction, either in reference to health or for the proper agricultural utilization of the quantities of refuse produced in cities.

But it may be objected that the realization of the exterior sanitation of cities will cause heavy expenditure.

That is true, and yet municipalities should understand that, if they have to pay for bringing in pure water, they must equally, and the obligation is no less strict, pay a second time to remove this same water encumbered with the refuse of the town, and finally pay again to purify it by regular and intermittent irrigation on a soil both suitable and cultivated, so that, while harmless to the neighborhood it may be of use to cultivation.

What municipalities will spend on internal and external sanitation, they will recover in the lengthening of human life and the diminution of the budget of hospitals.

BROOKLYN'S WATER WORKS.

The Delay in the Building of Additions Planned Years Ago.

From "The Engineering News."

The annual water famine in the Borough of Brooklyn is announced by the newspapers, and has been declared imminent by the officials in charge of the Brooklyn works. Mr. Robert Van Buren, engineer in charge, officially stated a few days ago that there were only three and a half days' supply in storage. This alarming condition is not due to lack of water in the collecting area, but to an absence of facilities to get it to the city. Prior to consolidation a forty-eight-inch main from Millburn to Spring Creek was proposed, and the contract for it almost awarded. For some mysterious reason the award was not made. Since consolidation the Water Department has urged repeatedly that an appropriation be made and the conduit laid, but the matter has been in abeyance, or dragged slowly on, year after year. Finally, the

appropriation bill reached the Municipal Assembly, where it has been "hung up" for weeks.

For three years, Mr. Van Buren says, no work has been done "for the improvement, extension, or protection" of Brooklyn water supply, except the erection of a $6,000 steel chimney at the Mount Prospect Station, and the money for that came out of the water revenue. Besides the forty-eight-inch conduit there are needed new pumping stations and a filtering plant to utilize water otherwise unavailable.

Mr. James Moffett, Deputy Commissioner of Water Supply for Brooklyn, makes the following official comment on this strange situation:

"It is a sad commentary on municipal government when such a state of affairs exists that the duly elected officials of the second city in the world, whose bounden duty it is to appropriate the necessary money to make available for use the water which is running to waste at its very doors, have become so utterly oblivious of their oath of office as to permit the inhabitants to reach an absolute lack of water."

This sounds wonderfully like the utterances from Philadelphia during the period when the gas works were being wrecked so that they might be turned over to a private company, as they finally were, and very like the warnings from the same city when the water works were being starved to the same end. The latter attempt seems to have failed completely in Philadelphia. There is reason to hope that if a similar one is and has been at the bottom of the Brooklyn delays, all along, it also will be thwarted.

That the Brooklyn works were the object of the Ramapo promoters for the ten years prior to the time their prey was enlarged through consolidation there is much reason for believing. For years past the Brooklyn water supply has been the subject of attack from certain quarters on all possible occasions. Its alleged inadequacy, impurity, expensiveness, and legal complications, through affecting private rights in ground waters, have been exhibited in kaleidoscopic succession until the people of Brooklyn seem to have become incredulous and indifferent. It is high time that they awake to their danger, and insist on the immediate prosecution of the works planned years ago, and doubly or trebly necessary now, to make available the supply already developed and daily going to waste.

THE TENEMENTS AND TUBERCULOSIS.*

By S. A. Knopf, M. D.

If I should be asked what conditions are most conducive to the propagation of tuberculosis and especially pulmonary consumption, I would have to reply, the conditions that prevail in the old-fashioned tenement houses as they still exist by the thousand in this and other large cities. In these tenements there are not only a far greater number of consumptives than in the same area elsewhere, but the proportion is actually greater per number of inhabitants. Thus they not only contain countless centres of infection for old and young, and multiple foci of reinfection for those already afflicted, but these dwellings with their bad air, darkness, and filth make a cure of the disease impossible and a lingering death for all those infected by the germ of tuberculosis a certainty. If anyone thinks me an alarmist, let him glance at the charts exhibited in this building. There he will see that there are houses in which can be counted as many as twenty consecutive cases of tuberculosis during the last four years. This number represents, however, only the cases reported to the board of health. Now, you must not think for a moment that these represent the actual number of cases of tuberculosis existing in that particular tenement. They are only the ones where the disease had so far advanced that medical aid became imperative, a physician had to be called in and the case was reported. But how many of the moderately advanced cases are made known to either physician or board of health? I venture to say those not reported are more numerous than the reported ones. They constitute that class of pulmonary invalids who are still able to work, and who imagine themselves to be suffering only from chronic bronchitis, and the equally large number of children from tuberculous manifestations other than pulmonary. To the uninitiated it may sound like a paradox when I say that the tuberculous invalid who is still up and about, perhaps supporting his family, is often the greatest danger to the community, to his friends, his neighbors, and to those who may succeed him in the tenement he lives in. It is this class of consumptives, which, from

*An Address at Conference held under the auspices of the Tenement House Committee of the Charity Organization Society, New York, February 20, 1900.

either ignorance or carelessness, spread their disease broadcast by depositing their infectious sputum everywhere without any regard to the danger.

In the many discussions which were raised during the past few months previous to the framing of the bill to establish a state sanatorium for the treatment of incipient cases of pulmonary tuberculosis, it was repeatedly argued that we should rather isolate first the advanced and hopeless cases. I appreciate the necessity of public care for this class of patients very much indeed, but the advanced and hopeless poor consumptive is usually confined to one or two rooms, and while ten to one he will infect these thoroughly, he can not do as much harm as he used to when he was still up and about and could spit in the dark hallways of the tenement, on the floor of his workshop, in the street car, or wherever his calling may have led him. Thus the advantage of curing an incipient case of pulmonary tuberculosis is inestimable. Leaving aside the direct benefit to the commonwealth by making a breadwinner and useful citizen of this pulmonary invalid, who himself, and also perhaps those depending upon him, might have become otherwise a burden to the community, it is beyond calculation to say how many lives may have been saved by curing that one man before he had a chance to disseminate his disease among his fellow-men in the manner just described. As to what extent he may do this you can perhaps perceive if I recall to you the fact that the average number of bacilli which the up-and-about consumptive expectorates daily is estimated to be seven billions.

But let us return to our main subject and try to find some explanation for the fearful condition which makes pulmonary tuberculosis an endemic disease of the tenement house. I pointed out to you that there were houses where an unusual number of consumptives have lived and died during the past few years. Now, let us pay a visit to one of them. We pass the throng in the narrow street, make our way through the crowds of children playing on the sidewalk, and enter the dark hallway. The first thing that greets us is the odor peculiar to badly-housed humanity. You cannot define it, but I know many of you who labor among the poor know it only too well. Have you ever thought what this odor really means? It represents the exhalation of a multitude of people, the toxic products expelled during the process of expiration, which settle on the walls, ceilings, and stairs of these hallways. Chemistry has not yet been able to fix its composition; we know it exists and we know its deleterious influence on the individual who

is obliged to live constantly in such a house. Some very prosaic people call this smell the smell of humanity, or the smell of poverty. I do not quite like these names, for I do not think them either appropriate or just. There can be humanity without smell, and amidst poverty there can be the sweet atmosphere of cleanliness and purity. If the bad odor we perceive in our wanderings through those dark halls must have a name let us call it the smell of ignorance and greed. It is the result of ignorance on the part of the poor housed there, who do not know the value of fresh air, sunlight, and the cleansing property of water—the trinity which, in combination, are the best antitoxine against those poisonous products. It is the result of greed on the part of the owner, for only a heartless man could tolerate such a condition of filth, foul air, and darkness, as is characteristic of these tenement halls.

We ascend one or more flights of stairs, in the rear or front, it makes little difference, since there is probably a consumptive on each floor. Owing to the expense of artificial lighting the halls are, of course, very dim and though we cannot see the dirt on the ballustrades we feel that it is there and only reluctantly take hold of them in order not to fall. We arrive at the rooms we are seeking. A knock at the door, a feeble invitation to come in, and we are in the midst of tuberculosis. There are two or three small rooms, but only one receives direct air and light. In a dark small bedroom lies the patient; there is a different odor in this room, a distinct smell of disease mingled with the odor of cooking. We ask to have the window open, but the patient fears the draft. He is a husband and the father of six children of whom two have died within the last year. The youngest of the remaining children is a few months old; the elder, a girl of ten, attends to the household duties while the mother goes out to work. We greet our consumptive friend lying there, bid him cheer, and tell him we came to investigate his case. He faintly smiles, and we ask him to tell his story. In a feeble voice, interrupted by fits of coughing, he tells us that up to two years ago he was a strong and vigorous man, he had a good position as a mechanic, lived in a better tenement than now, and drank only occasionally when life at home became too dull. Once he caught a severe cold. He went to a doctor. A few weeks of rest and some medicine and he got well. After some months another cold—the same treatment, the same result. And then again a cold, and so on, until the periods between the times when he could labor and earn, became longer and longer. The

savings from better times disappeared gradually; a cheaper tenement was sought; the visits to the doctor were given up, and the patient finally ceased to work entirely. To go to the dispensary was too much of an exertion. The faithful wife nursed him tenderly, but soon all the savings were gone. The burial of the two little ones—one having died of bowel complaint and the other of brain trouble—had cost so much that the mother decided to go out to work in order to support the family. While listening to the pitiful story we look around the scantily furnished rooms. The babies are playing on the dirty floor, touching everything with their hands, putting their fingers in their mouth, and inhaling the dust laden with disease germs. When we consider that this case was only reported a few weeks ago, and that until then the patient had hardly taken any care with his expectorations, can we wonder that two children died within a few months, one from bowel-complaint—which probably was nothing else than intestinal tuberculosis—and the other from brain trouble, which is only another name for tuberculous meningitis. The remaining little ones look pale and underfed. The little mother preparing the evening meal has seemingly a better appearance. She has to do so much running out in the street to buy the provisions for the family that she gets more air, and if the father does not feel too badly she wheels out the baby sometimes. Yet to the experienced eye there are already traces of overwork in this delicate child organism. The precautions the patient takes now with his expectoration consists in having placed before him on the floor a cuspidor partially filled with some antiseptic fluid. Owing to his weakness he does not always succeed in depositing his sputum exactly in the centre and sometimes he even fails to hit the vessel at all. We call his attention to this lack of precaution and advise him to use a light mug which he can bring near to him, or moist rags which he should have burned in the evening on his wife's return.

We bid adieu to this interesting family to visit another case which had been reported two flights higher up. But on the next floor we pass a door wide open and hear the rattling of sewing machines, suddenly interrupted by a terrible cough. We halt and listen for a moment. Another cough of different pitch, coming evidently from another person. We enter—again a different picture. The air is filled with dust and steam, the odor indescribable. The room is filled with people; an elderly man with dark features, a velvet cap on his head, a wife, a son, a daughter-in-law, two

young girls and a number of children, all in one room. The grown persons working over their machines or pressing garments with heavy flat-irons, the little ones playing on piles of cloth or unfinished clothing. These latter with the children playing about them are the mysterious agents which as newly made garments are not only capable of spreading tuberculosis, but are frequently the very medium whereby more acutely contagious diseases, such as smallpox, diphtheria, scarlatina, and measles, are carried into the homes of the well-to-do. The description of the home we are visiting has already told you that we have before us a small sweat-shop. Without questioning we recognize in the young mother and in her unmarried sister the two coughers. We venture to ask them as to their condition, but they tell us that they are well. One says she coughs only because she is going to become a mother again, the other assures us she coughs only when she bends too intently over the machine or when the little ones raise too much dust. Both women are plainly in a state of evolution of pulmonary tuberculosis. Both expectorate freely, and, alas! indiscriminately, spreading their disease among their own kin and others. They have not yet consulted a physician, they did not feel the need of one, and besides this, it takes time and money. They get occasionally some patent cough mixture in the nearby drug store. As a matter of course these cases belong to the class of unreported ones. Should these people ever move before their cases become known to the Board of Health they would leave the germs of tuberculosis in every portion of the rooms, and the new occupants would have all possible chances to contract the disease. For you must know that tuberculosis sputum retains its virulence in the dried state often for a long period of time, but especially so in places where fresh air and sunlight have little access.

Ducor, quoted by Dr. Park, of the New York Health Department, in his recent book, relates an instance of a healthy family having been infected with tuberculosis from living in a room which had been occupied by a consumptive two years before, and on examining the sputum-stained wall-paper not only were tubercle bacilli found in it, but upon guinea-pigs being inoculated with scrapings from the walls they died of tuberculosis.

We advise the two young women to call in a physician or to go to a dispensary and urge them not to expectorate except into a ves-
l partially filled with water, and if this is impossible, owing to the
›wded condition of their workshop, to use a small pocket flask
· that purpose.

We have one more family on our list which we desire to visit. Again a cough re-echoing in the hallway which would guide us even did we not know where to go. This cough which is heard on nearly every floor, recalls to one's mind a hospital ward of consumptives. Our third visit leaves a less painful impression, for the rooms we enter are clean. The sufferer is a widowed mother. Thanks to the conscientious advice of the physician the disease seems to be here under control and confined to one member of the family. There is little hope for her recovery, and her total helplessness makes it necessary for her only maiden daughter, otherwise a regular bread winner, to remain at home and consecrate her entire time to the nursing of the mother. In the home and the faces of both of these women one can still see the traces of refinement and culture. What calamity has brought them into these surroundings must remain their secret. But we know that only with reluctance do they accept the much needed help which comes to them regularly through the medium of the charity organization.

Such and sadder pictures you can see daily in visiting the tenement homes of our city. To many of you the thought may have come: Why are these people not in a hospital? I must answer you by saying that there is no room for them.

But what can we do to stop this plague if there is no room for the advanced cases in the hospital and no sanatorium for the cure of the incipient cases? I believe I may modestly claim that I am an ardent advocate of the establishment of sanatoria and special hospitals maintained by the authorities and private philanthropy, and other public measures to stop the spread of tuberculosis, such as better sanitary laws, more public baths, parks and play grounds, especially in the crowded tenement districts, proper physical and hygienic education in our schools, etc.

While the realization of these institutions and proposed improvements will do a great deal toward the decrease of tuberculosis, the greatest factor in solving the tuberculosis problem will, however, be the proper housing of the poor. As long as the law will permit tenements to exist, or to be constructed anew, which, owing to the lack of air and light and want of cleanliness, constitute veritable hotbeds of tuberculosis, so long will sanatoria and special hospitals serve only as recipients of the supply of tuberculous patients daily created anew.

Tuberculosis is a preventable and curable disease. Let us emphasize these important points in our crusade against it. In spite

of all the opposition which we have encountered I do not fear but that ere long we will have a State sanatorium for the treatment of incipient cases and a special hospital in the vicinity of the city, which will be followed by the establishment of numerous institutions by private philanthropy. My faith in the wisdom of our statesmen and city fathers and in the generous hearts of the American philanthropists is too great for me to falter in my hopes. Such institutions—sanatoria and special hospitals—will serve to cure those already afflicted with the disease; but the model tenement house and the model tenement house management will be the greatest factors in preventing the development of the disease. Though when we consider that we have in this city alone more than ten thousand poor consumptives, those new and model tenements will probably also have to harbor at times a few tuberculous patients; but how much brighter prospect have they of being cured in these new houses with plenty of light and air, perfect ventilation in all rooms, complete sanitary arrangements and the absence of filth, dirt and sickening odors!

Since consumption can be successfully treated in nearly all climes and the essentials of the modern treatment of tuberculosis are plenty of fresh air and light, good food and judicious medical supervision, the probability of treating successfully an intelligent consumptive patient, even at his home, must certainly be an assurance to us all, since we know that there will not be room enough for all these patients in the institutions. The danger of infection from such a patient in a model tenement house can be reduced to a minimum, and the same might be said in regard to other contagious diseases.

In Germany it has been proposed that in order to control and combat tuberculosis successfully, every person should submit himself to a periodical examination for the possibility of a tuberculous disease, and that this examination should be compulsory like vaccination.

As to the advisability of inaugurating such a movement in our own country I prefer to suspend judgment; but if I should be the fortunate owner of a model tenement house, I certainly would make the medical examination obligatory for all those who desired to become my tenants. Should there be one, two, or even more among them with incipient tuberculosis, I would not refuse to these the blessing of a sanitary home, which, as long as we have so few special institutions, will certainly be an addition to their chances of

getting cured. But I would have every one of these prospective pulmonary invalids instructed indiyidually as to the precaution he has to take concerning his infectious sputum, and urge him to place himself under medical treatment. I would warn him that though the hospitality of this model tenement house had been extended to him, if he ever wilfully violated the given instructions and regulations concerning the disposal of his expectorations he could no longer remain in the house. Let me remark here incidentally that the application of this injunction constitutes the essential part of the discipline in sanatoria and special hospitals in our own country and abroad. Any wilful violation means immediate dismissal. It is this precaution whereby the healthy individual is more protected from contracting the disease in these very homes for consumptives than probably anywhere else outside of them. I could verify this statement by statistics which I have published before in connection with this subject, but I will refer here only to one of our home institutions, the Adirondack Cottage Sanatorium, under the direction of my esteemed friend, Dr. E. L. Trudeau. During the fifteen years of its existence not one of the medical attendants and nurses who have lived and labored there in close contact with hundreds of consumptive patients, has ever contracted pulmonary tuberculosis. Thus, I believe, the model tenement house could also be made a place safer from the danger of contracting pulmonary tuberculosis than any other. But I would go even a little further in my precautions to avoid a repetition of such sights as we observed in our wanderings through the tenements of the city. I would see to it that all the tenants should get a sufficient knowledge of what to do in case there is a patient suffering from a communicable or contagious disease in their midst. Leaflets such as the Pennsylvania Society for the Prevention of Tuberculosis issues for distribution should be placed at regular intervals in the hands of the tenants. The titles of some of these leaflets are as follows: "How to Avoid Contracting Tuberculosis," "How Persons Suffering from Tuberculosis Can Avoid Giving the Disease to Others," "Predisposing Causes of Tuberculosis and How to Avoid and Overcome Them." In short, I would found a local society for the prevention of tuberculosis, composed of my tenants and those of other model tenement houses. I would institute reunions and invite physicians and sanitarians to address them, not only on the prevention of tuberculosis, but also on the prevention of other diseases. If I could besides this succeed in procuring one

of those noble women who could teach to the women tenants the art of good and economical cooking and careful housekeeping, and procure for all men, women and children alike such educational and social features as would make their home-life happier and brighter, I would think that the ideal of housing the poor was attained.

After the description of all that you have heard and seen since this splendid exhibition has been opened, there is no need for me to tell you of the urgent necessity of better laws concerning the building of tenement houses, and you all will realize that it becomes our duty as men and citizens no longer to tolerate existing conditions. But in the meantime I think we should combine our individual efforts to further all such enterprises which, independent of legislative help, will attain the same end. Though we may not reap what we sow, as our worthy chairman, Mr. Frederick W. Holls, at the opening of this exhibition so beautifully suggested, let us sow our grains nevertheless, and let us sow them well and diligently. In the proper housing of the laboring classes lies the welfare of the community and the sanitary, social and intellectual prosperity of every citizen.

Think of the difference between the old tenement which we desire to abolish and the new which we desire to erect, and you will need no further incentive. The one, a beehive of humanity living in filth and dirt, well-nigh without light and air, but with a multitude of sickening odors; with no attractions to foster home-life, virtue and temperance; disease breeding in every room; a hotbed of tuberculosis and other contagious diseases from which are spread the foci of infection throughout the city among old and young, poor and rich alike. The other, a well-regulated city within a city, its citizens living in airy, sunny rooms, in modest but attractive homes, which make the longing for the rumshop less and create a love for temperance and purity. A home where infectious disease can be controlled and from which the most bitter foe of mankind, "the great white plague"—consumption—can be ultimately and lastingly banished.

MUNICIPAL MEAT INSPECTION.

The commercial spirit may be credited with the establishment, in this country, of Federal meat inspection. A better milk supply has been the result of the dealer's desire to hold his trade. It will be commercialism rather than health that will compel municipal inspection of meat, and the compelling agent will be the physician. This proposition is therefore submitted, that the physician is the most important factor in the development of municipal meat inspection.

Like all other branches of the science of medicine, that of dietetics has had a gradual development, and it is still in process of evolution.

There was the time when, barring milk-punch or the broths, the physician wisely left dietetic suggestions to the old nurse, with the mere direction that the patient be kept on a low diet or "fed up." Now the physician writes his diet lists for diabetes, rheumatism, the various dyspepsias, gout, uric acid, Bright's disease, etc. Accordingly he makes his suggestions, now for a beef diet, again for a milk diet, at another time for a diet consisting entirely of vegetables. He goes further. He distinguishes between meats of long fibre and short fibre, proscribing the one, prescribing the other. So he goes over the vegetable foods, making selected lists for the needs of different classes of patients.

It was not at all out of place, a number of years ago, for Dr. Sydney Ringer to introduce into his therapeutics a department of dietetics in which were found simple but excellent recipes for the dietary of the sick.

"Must the physician be a nurse?" used to be many times asked. It has come to be answered that the physician who understands the art of nursing will, other things being equal, secure beyond his confrères the public confidence. "Must the physician be a cook?" I suppose was asked when Ringer appended his dietary to his therapeutics. While he may not need to be capable of engaging as chef to the Waldorf-Astoria, experience has demonstrated the wisdom of the physician being, at least, enough of a cook to direct, when necessary, in the preparation of articles of food for his patient.

There was a time when the quality of the milk was left, by the physician, entirely to the cow. Where he found that the quality of

the milk was modified by the mercenary spirit of the dealer, the physician secured the passage of laws intended to prevent this. When the veterinarian had proved the existence in the cow of certain diseases, like tuberculosis, and had demonstrated the possibility of contagion through the milk, the physician made a demand for the inspection of dairy herds. He has learned now that milk is a remarkable carrier of disease through germs introduced from without, and knowing that the greatest possible care cannot altogether prevent this, he has begun to recommend a Pasteurized milk. And it is in response to the physician's demands, based upon facts demonstrated by scientific investigation, that milk dealers are compelled to-day to offer a milk made pure by Pasteurization.

It is not too much to expect that the same history will be repeated in regard to meat. The time must come when the physician shall be as well posted on all the diseases which affect the food value of all food-producing animals as he now is on the diseases which are generally traced directly or indirectly to the milk supply. The time is almost here when the physician will be as well acquainted with the purposes and methods of meat inspection as he now is with milk inspection. And then he will begin to demand inspection of meat, and he will express that demand through the laws of the Board of Health. And when that time comes we shall see that the physician will keep himself informed as to the houses from which inspected meat comes, and urge that meat, and that only, upon his patients. Then, the pocketbook of the butcher being touched in a legitimate way, the dealer himself will court inspection as the abattoirs now ask for Federal inspection in connection with interstate trade.

The veterinarian has done his work and done it so well that in a number of instances States and cities have responded to that work in the passage of laws requiring inspection of meats. But in many places political jobbery has stepped in, and men unfitted for the work have been appointed. It is simply another case of laws being vitiated in their operation by their premature birth—that is, by being enacted ahead of an enlightened sentiment. And that enlightened sentiment in regard to meat inspection must be secured through the agency and coöperation of the physician. Hence a repetition of the proposition with which this began: The physician is the most necessary factor in the further development of municipal meat inspection.

It is useless to attempt to refute the charge that in advocating inspection of meats by trained veterinarians a "job" is wanted. Too often have Government positions been developed on that principle, and the world is too busy to stop and minutely investigate individual character and motives. It makes its judgments wholesale.

What, then, is needed? Just this: That the physician shall be trained in the necessity and methods of meat inspection, and so be placed in position to intelligently advocate it. The graduated physician must be trained through the articles in medical journals and through papers and addresses at society meetings. This was urged a year ago by an honored member of the profession; but you cannot compel a man to read medical journals, nor can you compel him to attend society meetings. So let us direct our work upon the coming physician. Through the few who possess the influence rather than through the many, let us urge the establishing in medical schools of lectureships on milk inspection and meat inspection. Let them be at first optional courses. And let us, as the men fitted by training and practice, especially those who are inspectors, hold ourselves ready to offer even gratuitous service on this line. Here is the opportunity to disprove the charge above referred to. There is work in such lectureships, but an interest in the welfare of the community should lead us to be satisfied in the pioneer days of such a movement to put forth labor the appreciation of which may not be in dollars and cents.

It is a pleasure to recall the Harvard Medical School, and to point to its endowed chair of comparative pathology, whose incumbent, Dr. Theobald Smith, for years did worthy service in the Bureau of Animal Industry. This is a story more in the direction advocated by this paper. There may be other medical schools that have made such addition to their studies, but it has not been the fortune of the writer to see their curricula.

Let every member of the profession, every qualified meat inspector, go forth with this sentiment: Milk inspection and meat inspection taught in every medical school in the land. I would not have it taught in the same minute manner that it should be taught in veterinary school, *but have it taught.* It might be, for a while, only an arm of the chair of hygiene, but *have it taught.* It might be but a leg of the chair of dietetics, but *have it taught.* Surely the incumbent of either the chair of hygiene or the chair of dietetics would be glad to have this course supplemented by a few lectures and demonstrations by a trained inspector—in some way, in any way—on milk

inspection and meat inspection in every medical school in the land. Then, as surely as day follows night, meat inspection will be called for by an intelligent popular demand, fostered by the sentiment of the medical profession.—"The Journal of Comparative Medicine and Veterinary Archives," May, 1900.

FOOD ADULTERATION IN EUROPE.*

As the food supply has always been the first problem to solve among the nations, and as a wholesome food supply is of the utmost importance for the health of the human race, it is natural that those whose duty it is to protect this interest are assuming great activity against the prevailing tendency to adulterate and debase the food supply of the world. But in the face of all this activity on the part of the authorities, the adulterators are waxing bolder, and the field for the debasement of human food is extending its boundaries every year with a rapidity that is as startling as it is discouraging.

The following are a few of the articles of food that are adulterated in the Old World to an extent that is attracting the serious attention of the authorities in the different countries, and especially in Switzerland, where the laws against the debasement of any kind of human food are very strictly enforced.

CHOCOLATE AND CACAO.

Chocolate and cacao are coming more and more into general use as articles of food. Many people who are unable to drink coffee or tea use chocolate and cacao as a beverage. The slot machines have extended the consumption of chocolate, and altogether its use has greatly increased during the past ten years. This advance in demand forced an increased supply; the adulterator saw his opportunity and commenced operations, and at once there was noticeable an increase in the trade in mutton tallow, lowest grade sugar, shells of the cacao bean, sawdust, potato meal and the ochers containing the proper colors.

HONEY.

This delicious and, in its natural state, very wholesome breakfast dish is coming into general use on the Continent of Europe; and the bees, be they never so busy, cannot supply one-third of the honey that is consumed, so some one must naturally make enough

*Consular Reports, No. 238.

to supply the deficit. Through a series of manipulations of almost everything containing saccharine, this is now being successfully and very profitably accomplished; and, of course, this industry flourishes best in those years when the bees have but little success in manufacturing the real article, which very often occurs. The "dishonoring of honey," as it is called, is a growing art, and several successful establishments are now in operation, producing large quantities of this artificial honey for the market, and the product is in popular demand. The people seem to like it. It is cheap and the sales are large. All sorts of ingredients enter into its manufacture, among which may be mentioned syrups, malt extracts of the lowest grades, meal of different kinds and cornstarch. From a pound of bee honey five to ten pounds of "dishonest honey" are made so successfully that it sometimes requires an expert to discover the deception.

WINES AND LIQUORS.

It is a well-established fact that some of the wine that is consumed has never contained a drop of grape juice, and many of the liquors contain hardly a drop of the genuine article. Much of the wine on the market is from pressings several removes from the first, and is amplified by the sap of plums, cherries, apples, berries of different kinds, and water. Potato syrup, dissolved in rain water and mixed with the refuse of the wine and cider press, makes a salable beverage, and some people are satisfied with the aroma and stimulating qualities of this artificial wine. The desired color and bouquet may be obtained by mixing wine acids with cream of tartar.

BEER.

Although the production of this beverage is very carefully controlled by the authorities in many of the continental countries, especially in Germany and Switzerland, the adulteration is carried on to such an extent that its quality is not what it would be if the laws against its debasement could be rigidly enforced. Chemical analysis proves that, aside from malt, hops and water, some beer contains chicory, pine sprouts, camomile, henbane, wild cherries, poppy heads, guinea grains, boxwood, potash, vitriol of iron, alum, licorice solution of tartar, linseed and similar ingredients. These substances enable the manufacturers to produce beer cheaper, and some of them help to make it heavier and more stimulating, and, from the large quantity consumed, it would seem that this is what some people demand; consequently the supply.

BREAD.

In Switzerland bread seems to play a more prominent part as food than in any other country, except France. It furnishes 70 per cent. of the nourishment of the 3,000,000 inhabitants in the Swiss Republic, and that the nourishment is wholesome and adequate is proven by the sturdy health for which most of the Swiss are noted. I doubt, owing to the careful enforcement of the anti-adulteration law of Switzerland and the prompt and vigorous protest of the people themselves when an infraction of it is discovered, whether there is any country in Europe that has, as a rule, purer and more wholesome bread than this republic. But rigorous enforcement of laws and prompt resentment of the bread eaters have not, thus far, prevented adulteration taking place. Being the chief article of food, it has the widest market, and consequently offers the best opportunity for debasement. To increase the weight of bread is becoming quite an art on the continent of Europe. Some bakers soak the dough heavily with water and by quickly baking succeed in holding much of its weight. Others mix potato meal with the flour. This system does not necessarily make unwholesome bread, although it lessens its nourishing power. The most unwholesome bread is made out of low-grade flour, in which alum or blue vitriol is used to improve its appearance. Sometimes the admixture of these ingredients is too generous, and these poisons become so pronounced as to severely affect the health of the consumers.

MILK.

Milk also has its troubles. The pump is not its only source of increase. If water is added to milk, the dilution will always be apparent unless some ingredient is applied to cover the deception and restore the color, and sometimes certain kinds of soap are successfully used for this purpose.

BUTTER.

Butter has not escaped the wiles of the adulterator, and the different ways in which it is debased are many, and some are past finding out. All kinds of cheap fatty substances are employed and good oleomargarine is the least objectionable of them all, according to experts. Most people like yellow butter and demand it at the market place. It is not difficult to understand, therefore, that when the season and fodder are unfavorable to the making of yellow butter, art should step in to satisfy the wishes of the buyer;

and the juice of the carrot is used to give the butter a golden hue. But this can hardly be called deleterious adulteration, provided pure carrot juice is employed. Water left in butter increases the weight, and some butter makers have not allowed this fact to escape their notice.

CHEESE.

The door to adulteration is wide open in the cheese industry. Natural and some chemical fats find their way readily into cheese vats. Milk of all qualities and in all stages is used, and potatoes that are worthless for marketing purposes are ground exceedingly fine for cheese making; and it is said that even the blood from the slaughterhouse sometimes plays a part in this manufacture.

COFFEE.

If all of the substances that pass through a Continental coffee-grinding machine during the year should be written in alphabetical order, A would begin the list with acorns and W would end it with wormwood, sprouts of which are sometimes used to give the debased coffee a slight aromatic bitter taste. Adulteration occurs largely in the coffee that is sold in the ground form. Several coffee-berry factories have been discovered in Europe which were doing a large and profitable business by molding an admixture of tan bark, stove rust, clay, sawdust, chicory, coffee sediment and coffee meal into a neat berry by the aid of some agglutinant; and these berries were so well made that the deception was not discovered for a long time. This production had a large sale among the lower classes of Russia and Poland, and, mixed with the genuine coffee berry, its sale was quite lively in other parts of Europe.

Unroasted coffee berries are often made from oat and rye flour and corn meal. The natural aroma of these grains is destroyed by some process, and, after the proper amount of coffee aroma is added, the berries are formed and caused to maintain their shape by some adhesive substance. The test usually employed to discover this deception is to place the beans in a receptacle containing warm water; this will dissolve them in a few hours.

TEA.

The debasement of tea is a growing industry. Twenty-five years ago the tea-drinking habit was confined largely to Holland, Russia and England; but the beverage is now popular in almost every Continental country. This new condition increases the de-

mand, and the adulterators thus have the opportunity to ply their nefarious trade with success. Take a handful of ordinary tea, place it in lukewarm water, and when the leaves are thoroughly saturated, open and spread them out, and, three chances in six, you will find a quantity of strawberry, linden, sage and other leaves in the collection. But should it be found that all of the leaves belong to the tea plant, that will be no proof that adulteration has not taken place, for the clever Chinese have a trick of using the old leaves of brewed tea for the export trade, and some of the tea dealers of Europe have discovered the deception and are utilizing the trick by preparing these leaves themselves.

PURITY OF AMERICAN MEATS AND FRUITS.

Thus, at a time when American meats and dried fruits are having a struggle for existence on the markets of Germany and Switzerland and some other European countries, owing to the unfounded and false ideas of their unwholesomeness—ideas created by the spirit of competition alone—it is not an inopportune time to call attention to the well-founded belief among the breadwinners of Europe that our meats and fruits are far cheaper and more wholesome and nourishing than tons of other food supplies which they are purchasing every day without thought of protest, and at prices high enough to satisfy the most eager profit taker in the land.

JAMES T. DUBOIS,

ST. GALL, April 3, 1900. *Consul-General.*

SUGAR AS FOOD.*

In Grandeau's pamphlet, entitled "Le sucre et l'alimentation de l'homme et des animaux," Paris, 1899, the following estimate of the world's sugar production is given:

	Tons.
Cane sugar	2,432,000
Beet sugar	4,822,000
Total	7,254,000

Nearly one-fourth of all the sugar produced is German beet sugar, which amounts to 1,700,000 tons annually. Of this Ger-

*Consular Reports, No. 238.

man production more than one-half is exported, and accordingly the price is dependent upon sugar consumption in other countries and the demand in the world's markets. The growth of the beet-sugar industry in the United States and the increase of production in other parts of the world are already causing anxiety in Germany. The calm and intelligent German mind is accordingly now busy with investigations upon the results of which plans can be based for preserving a healthy equilibrium between consumption and production, and thus protecting industries in which millions of Germans have a vital interest.

Many elements of uncertainty enter into the question of how to restrict the increase of production. Moreover, as far as foreign countries are concerned, it would be useless to waste time in discussing this question.

The questions, therefore, which Germans are now considering are these:

There is a large overproduction of sugar in Germany, which at present makes exportation an absolute necessity. Will natural causes maintain this foreign demand for German sugar, and can Germany's overproduction be decreased by increasing the consumption of sugar at home?

The use of sugar began in the Orient and gradually spread to Europe and America. The quantity used per capita is constantly and everywhere increasing, as is shown by the following table:

	1870-1875.		1885.		1897.	
Country.	Kilograms.	Lbs.	Kilograms.	Lbs.	Kilograms.	Lbs.
Great Britain.....	22.6	49.8	32.6	71.8	38.9	85.7
America.....	16.3	35.9	24.5	54	28.3	62.3
France.....	7.8	17.1	10.7	23.5	13	28.6
Germany.....	6.7	14.7	7.8	17.1	12.1	26.6
Austria.....	—	—	—	—	8.9	19.6
Russia.....	—	—	—	—	4.9	10.8

Owing to the growth of the sugar-using population, the total increase in the amount consumed is much larger than is indicated by the gain per capita.

The increase of consumption from 1874 to 1897 is shown by the following table:

Great Britain, total per cent., 90; annual per cent., 3.5. America, total per cent., 278; annual per cent., 12.1. France, total per

cent, 142; annual per cent., 6.18. Germany, total per cent., 157; annual per cent., 6.91. Austria, total per cent., 107; annual per cent., 4.65.

Unless, therefore, the world's production be very much increased, it is probable that the demand for German sugar will at least remain stationary.

But the German prefers to be ready to meet any emergencies which may arise. It is always possible that the foreign demand for German sugar may be lessened by increased production abroad, by measures growing out of international customs wars, and by other unforeseen causes. Furthermore, the amount of sugar which must be exported may be increased by the extension of beet culture in Germany. The protection of this great industry and of the people dependent upon it therefore demands a large increase in the home consumption. The table given above shows that the amount of sugar used in Germany per capita is rapidly growing, but it is realized that this growth must be encouraged and largely accelerated. This can be done in two ways—namely, by increasing the manufacture and exportation of conserves, marmalades, etc., and by increasing the amount of sugar used by individuals, especially in the army, where increased consumption may be made compulsory. The question of increasing the manufacture of conserves is a practical one, which does not require consideration here.

But before raising the amount of sugar to be used by individuals, German scientists have investigated the question as to whether this can safely be done. They have decided that the amount of sugar used by individuals can be increased without hesitation, as sugar has many valuable characteristics. Its value lies not alone in its sweetness, but in the fact that it is a valuable dietetic remedy and an excellent article of food. Sugar is a very easily soluble carbon hydrate and as such is quickly assimilated in human and animal bodies, producing warmth and force. It is also fattening and can be used as mast. As a developer of strength it has long been used, especially by mountain climbers. Various experiments have been made for the purpose of ascertaining whether sugar can be advantageously used for fattening animals. The results have proved favorable as far as hogs are concerned. It has been found that by-products of sugar fabrication, denaturalized and free of tax, can be advantageously used as food for hogs. Molasses, which contains about 50 per cent. of sugar, is already much used, mixed with palm flour or peat, as cattle food.

The principal object of the experiments has, however, been to ascertain positively whether, as alleged, sugar possesses the power of quickly increasing or restoring strength and thereby making men fit for unusual exertion. This point has been carefully investigated, the scientist not watching the entire muscular action of a man because that would have been too difficult, but confining himself to observing a single finger through an instrument called an ergograph—*i. e.*, "work measurer." He allowed the middle finger of the right hand to lift a weight, and then registered the degree of the lifting force. The experimenter found that after sugar had been eaten the lifting force was stronger than before, and he therefore concluded that sugar is a strength-producing material.

Other investigators claim, however, that sugar has merely an exciting effect through its sweet taste, and that a dulcine solution, which contains no carbon hydrate and accordingly cannot be nourishing, has the same effect as sugar water. The inference from this is that the assertion that sugar produces strength is a fallacy.

This disappointing experiment has, however, been repeated by two scientists, and the same result was reached when the man experimented upon had his full strength; but the effect of eating sugar was found to be entirely different when the man had first tired himself by turning a heavy wheel (ergostat). The eating of sugar brought to the exhausted man new strength, and the ergograph registered increased force, which was not the case when dulcine was eaten. It is accordingly accepted in Germany as satisfactorily proven that sugar can renew the strength of a wearied man through giving his tired muscles carbon hydrate as a strengthening material. Extensive experiments have since 1898 been made upon German soldiers at the manoeuvres, with moderate success. It is believed that by eating half a dozen cubes of sugar more than usual in a day a soldier's power of endurance is increased. The Germans, at any rate, think it worth while to continue to experiment, for the purpose of ascertaining positively whether sugar can give renewed strength to exhausted troops, thereby increasing their value in moments of emergency.

If in these ways the domestic consumption of sugar can be enlarged, the overproduction will be lessened, and it is hoped that thus beet culture and the sugar industry will continue to be of great value to Germany in the future.

GEORGE H. MURPHY,
Vice Consul.

MAGDEBURG, March 21, 1900.

THE NATURE OF PTOMAINES.

Attention should be called to certain misapprehensions concerning ptomaines and to a common laxity of the use of the term. Ptomaines are organic bases formed by bacterial action on nitrogenous organic matter of both animal and vegetable origin. They are sometimes designated as animal alkaloids, a term which in view of their possible vegetable origin is manifestly incorrect. It is a common belief that they are all poisonous in their nature, but while some of them are decidedly so, the majority of those thus far isolated are quite incapable of exerting any harmful influence. Different kinds of bacteria form different kinds of ptomaines, and the same organism may produce different kinds according to the nature of the substances and according to the conditions, such as temperature, access of air and other circumstances under which it works. In contact with certain kinds of material it may produce no ptomaines, or harmless, or very poisonous ones; and acting upon one and the same material under differing conditions it may be capable of evolving a variety of compounds equally different in action. Again, the same material may yield under like conditions poisonous or non-poisonous ptomaines, or none at all, to different varieties of bacteria. We have fallen into a common habit of ascribing to ptomaines the effect of all forms of organic poisons due to decomposition of food materials, regardless of the fact that other substances than organic bases are formed by bacterial activity. To these substances various names have been given, and at the present time there is considerable difference of opinion as to their applicability. In view of the fact that this confusion exists, and that in any case of poisoning of this sort the nature of the toxic substance cannot be known until it has been demonstrated by careful analysis, I would suggest that it would be preferable to adopt a general term suggesting food poison rather than a specific one having reference to the particular kind of product, the presence of which is suspected but not demonstrated. In all cases of food poisoning the effects produced are due either to substances formed by bacterial agency in the food itself before ingestion, or to toxic substances developed within the body after infection by the contaminating bacteria. They vary widely in character, sometimes

closely resembling those caused by metallic irritants, sometimes suggesting the presence of narcotics, and again being mistaken for infectious disease of common occurrence.—Portions of an article by Dr. Charles Harrington, before the Massachusetts Medico-Legal Society.—"Bulletin of Pharmacy."

THE TOXICOLOGY OF MUSHROOMS.

A branch of study much neglected by pharmacists (Thos. A. Keenan, in "American Druggist"), yet with which they are often brought into close contact, is that of mycology. The public appreciation of the mushroom as a cheap and easily obtainable article of diet is growing constantly, and scarcely a city of any size but now has its mycological club or centre. The greatest possible confusion exists with regard to the toxicology of the poisonous species of mushrooms. The poisonous group, or at least the genus which contains the more common poisonous varieties of mushrooms, is the Amanita. The majority of poisoning cases arise from the eating of one of two species, either the *A. muscaria* or the *A. phalloides*. The first named is popularly known as the fly agaric and the second as death-cup. The genus Amanita, of course, numbers many more species, but as we have remarked, these named are the two to which most poisoning cases have been traced. Now, here is where the confusion comes in: Atropine has been discovered to be a perfect antidote to muscarine, the poison of the fly agaric. The physiological antagonism existing between these two alkaloids was discovered something more than twenty-five years ago, and the indications for its use fully set forth. It has unfortunately been concluded that the antidote applicable in muscarine poisoning was applicable in all cases of mushroom poisoning, an error based upon a lack of knowledge regarding the poisonous constituents of the other members of the genus.

The poisonous constituents of the death-cup (*Amanita phalloides*) differ entirely from those of the *Amanita muscaria*. The characteristic poison of the death-cup is a toxalbumin, whose virulency is almost equal to that of the venom of the rattlesnake, for which, as is well known, no real antidote exists. In a case of rattlesnake bite, atropine would be about the last thing physicians would think of using as an antidote; yet they go on constantly administering this drug indiscriminately in all cases of mushroom poisoning.

THE VERMONT STATE HEALTH SCHOOL.

The second annual School of Instruction for Health Officers of Vermont was held at Burlington, May 22-23, 1900.

ABSTRACT OF PROCEEDINGS.

In opening the school, Dr. C. S. Caverly, of Rutland, president of the State Board of Health, referred to the many advantages of science in coping with disease and disease germs, and spoke of the great success of bacteriology since that science became better understood.

President M. H. Buckham, of the University, being introduced, addressed the meeting on the improvements of the last fifty years in antiseptic surgery and preventive medicine. The history of science, he said, demonstrated that it was a common thing for an insignificant thing to lead to important results. "The outbreak of the Asiatic cholera, I am told, is responsible for bacteriology. The medical profession at first gained little control over the disease. Religious people prayed that the plague might be stopped, but it remained to sanitary science to give practical aid in suppressing and doing away with the ravages of that awful disease. The cholera was stayed, but not entirely as expected. The discussion in Burlington of the germ theory of typhoid fever began a few years ago, when Dr. Goldsmith, of Rutland, started the ball rolling. The first effect produced by the belief in germ theory is startling. The air is impregnated with germs threatening to assail us, a large amount of the water we drink and the milk also contains germs. The science of bacteriology has the advantage that a man in a balloon has over an enemy below. He can see his danger and protect himself. We have yet learned little of remedial treatment of diseases. I believe that the next century will see disease stopped by preventive medicine." The speaker congratulated the school upon its object.

Dr. J. H. Linsley, Director of the Bacteriological Laboratory, reported on the work done under his direction during the past year, with a tabulated statement of the number of postoffices in counties which have and have not had work done in the laboratory; of samples of germs and tests of typhoid fever, diphtheria and tuberculosis sent in from 317 towns; water, with 771 tests from 90 towns; malaria, with 70 tests from 23 towns; milk, with 55 tests from 12 towns; beer, with 77 tests from 5 towns.

Hon. W. L. Burnap, of Burlington, addressed the school on:

The Theory, Scope, Powers and Responsibilities of Health Officers.

"A great subject to yourselves and to the public," he said, "but more to the public than to you. The laws relating to these matters meet with protest and opposition among the people who do not understand the needs.

"They talk about liberty and private rights. Liberty is not licence. In a broad sense legislature cannot take away the right to have property, provided it does not injure the general welfare. Any one has the right to use and enjoy property.

"If welfare of public does not suffer, the individual need not sacrifice his personal right and inclination. When actions and rights of one person injure the public welfare they can be taken away. The police power of State is a great thing.

"Principle of salutary and cleanly conditions enables the State to prohibit anything not conducive to general health. All individual rights are properly held in subjection to police power. When an individual is restricted he really does not suffer, but is aiding by general welfare resulting from the restrictions placed upon him.

"Few men are not open to gentle persuasion. Health officers should thoroughly understand their business so as to inform the individual.

"Boards of health have no common law. Their power comes from the statutes. They have no other power. The theory of legislature seems to be to give organized bodies power.

"State Board of Three takes cognizance of the health, general condition and effect of localities, and causes of disease. Every man who accepts such a position as health officer takes upon himself a big responsibility. He should know the causes of contagious disease; what the conditions that make the health of one community better than another; the law says he must. Your intelligent recommendations depend upon your intelligent knowledge. Your duties are to make yourself duly qualified.

"Scope of power conferred upon the board of health officers is wide.

"What can the board do after they are equipped?

"They are to find the causes which tend to the development of epidemic and contagious diseases. When causes are found in such cases you have jurisdiction, and that is all. Local boards have nothing to do but to administer the law, and make local regulations.

"In the case of Addison county, where a pig pen was 100 feet from a well, the court decided that regulations made by the local health officer were too strict. The decision of the local officers was not sustained. The lesson to be learned is that no regulation can be made that will be universally general.

"The State Board appoints a local health officer in each town. He, with the selectmen, form a local board of health. The local officer should be equally well qualified, with the State Board, for his particular duties. He must inspect the cause of disease and abate filth. He has authority to abate all nuisances—that is, public nuisances and private nuisances touching the public health and menacing the same.

"He may require isolating of all infected persons. He may provide for vaccination, but cannot enforce it. This State has not made vaccination compulsory.

"It is said that healthy mind and healthy body is supreme happiness in man."

The discussion opened by J. E. Cushman, who pointed out shortages of present law. Dr. John Gibson, and others, followed.

Mr. H. L. Stillson, of Bennington, gave a paper on

Quarantine—The Duty of the People to the Patient and to the Attending Physician.

"Show a farmer that it is his duty to pay a certain sum of money for protection, or that it is a duty he owes to his neighbor for the protection of the community, and very rarely will it be found necessary to repeat the excitation. The growth of public sentiment in the line of strict quarantine has been very marked throughout the State during the past seven or eight years. The ordinary householder in every part of the State demands protection from contagious diseases.

"The subject of quarantine may be divided as follows: (a) The tax quarantine imposes upon households; (b) the protection it affords to the people; (c) and that therefore the public has duties financially both to the patient quarantined and to the physician.

"As far as my experience goes, very little attention has been paid to the payment of the attending physician, and I think that right here is a weak point in the statute which should be remedied. More than three-fourths of the friction between the health officer, in the enforcement of quarantine, and the public financially affected, is caused by misunderstandings of one another. Perfect frankness should mark all the dealings of the health officer and

family subjected to quarantine. The health officer should take pains to explain the whys and wherefores of his actions to the householder.

"Evenness of temper, good judgment and sound common sense should be cultivated by every health officer."

Mr. Charles E. Allen, city clerk, presented a paper on

The Importance of More Full Correct Returns of Vital Statistics.

"This subject," said Mr. Allen, is of graver importance than is supposed, and its importance is growing.

"In 1856 Vermont passed a registration law requiring the keeping of births, deaths and marriages. The law, as amended later, required that town clerks return in March accurate figures to the Secretary of State; that clerks of school districts also return to town clerks their figures. The various amendments were made later with a view to obtain a better record of vital statistics. In 1896 an act was passed, and in 1898 amended, which is the present law.

"Five classes of diseases are named, these being subdivided and properly scheduled. Forty years ago there was want of proper discrimination in reporting causes of death. Diseases can now be classified with greater accuracy with the aid of the State Laboratory and Board of Health. Registration tables cannot be any more valuable and correct than is the material furnished by the health officers.

"The Vermont Medical Society favors the uniform system of birth and death registration, and also the scheme of registration recently sent out by the census bureau. We should be in the vanguard of health legislation."

Dr. J. H. McCullom, of Boston, read a paper on "Quarantine in Contagious Diseases," presenting many suggestions of practical utility to physicians and the public. And of like interest and importance was a paper by Dr. Peter H. Bryce, of Toronto, on "The Control of Diphtheria in Rural Districts."

Dr. H. R. Watkins, of Burlington, followed with demonstrations of disinfecting apparatus.

Dr. D. D. Grant, of Waterbury, read a paper on "Typhoid Fever, Its Cause and Prevention." He referred to polluted water as its chief source, when added to milk or otherwise. And, "next to water," he said, "ice is the most dangerous source. Flies, too, play an important part in the carrying of germs, and also oysters,

if planted in contaminated water. The bacilli are found in the oyster's stomach. This is most dangerous. Typhoid fever is adapted to the showing of germs and contagion. The regulations of the State Board of Health are not sufficient and stringent enough. The remedy in small places is to isolate any and every case reported; not necessarily a full quarantine. A great point is the proper and careful destroying of all excretions. They should be cremated."

Dr. C. W. Peck, of Brandon, read a paper on Tuberculosis. He endorsed the commonly accepted danger from sputum dust and milk from tuberculous cows and the necessary measures to prevent these sources, but, after all, "a particularly necessary measure to be taken to avoid the disease and keep it down hereafter is above all the education of children along the line of sanitary science." This paper was enthusiastically received and elicited warm praise.

Mr. C. P. Thatcher, of Pomfret, read a paper on "The Construction and Care of Springs." This paper gave many important suggestions.

Mr. E. B. Moore, health officer of Rutland, read a paper on "Sanitary Plumbing," elucidated with charts and diagrams of plumbing apparatus. He said, with much emphasis, "We relish pure air—we need it to breathe. In good sanitary plumbing the sewage is removed as fast as possible. Simplicity is a prime requirement in plumbing apparatus."

Dr. B. H. Stone read a paper on "The Significance of the Presence of B. Coli Communis in Water." This was followed by a paper on "The Uses and Duties of the Public Health Laboratory," by Dr. M. J. Wiltse. Doctors Linsley, Lyman Allen and Stiles discussed this subject, with others.

This was the concluding paper of the meeting. The exercises were closed with an evening session by demonstrations in the Laboratory of Hygiene.

MANUAL TRAINING IN GERMANY.*

On the 1st of October, twenty-four years had elapsed since the movement having for its object the manual training of boys was

*Consular Reports, No. 233.

inaugurated in Germany. In this space of time the idea has certainly been disseminated largely in this empire, and over 2,000 teachers have given their coöperation to the movement; nevertheless, both the internal and the external conditions connected with this new branch of tuition leave much to be desired. The original training in home industries and home occupation has almost entirely disappeared; it is carried on at present only in a few places in Holstein and in seventeen institutions for the blind. Most of the other educational establishments in Germany, including eighteen orphanages and forty-six deaf and dumb institutes, have already introduced manual training into their curriculum. But the endeavor to prepare the pupils in the schools direct for the eventual handicraft has obtained importance in only two of Germany's institutions of learning. The majority of the German home-industry schools only deal pedagogically with the subject.

There exist at present in Germany, distributed in 605 places, 861 schools and institutes wherein manual training is carried on in 1,514 workshops. Of this number, 836 schools and institutes conduct the training on a pedagogical basis. Prussia has 570 manual training schools, spread over 435 places and distributed among 596 workshops. Industrial centres take the lead, as follows: Prussia, Upper Silesia, the Rhenish Province and the Kingdom of Saxony.

The 1,514 pupils' workshops comprise 286 independent manual training schools and 238 public schools, of which 16 are auxiliary schools where the work is obligatory, 17 middle-class schools, 41 high schools—made up of 8 gymnasiums, 6 technical gymnasiums, 12 technical and technical high schools, and 15 boarding schools—7 preparatory institutes, 26 teachers' seminaries and 93 boys' asylums, while the remainder is made up of various kinds of private educational establishments. The organization of the handicraft tuition in the individual schools and institutes is varied in character. Sixty-nine institutes have adopted the whole curriculum as recommended by the German Association for the Dissemination of Manual Skill, while 16 dispense with the preparatory work; of the rest, 177 schools and institutes confine themselves to three branches, 261 limit themselves to two, and the remainder to one branch only. Five hundred and thirty-five workshops are devoted to wood carving, 527 to working in cardboard and 336 to the carpenter's bench; of these, 68 are closely connected with wood carving, 77 with preparatory roughing-out work, 35 with metal work, 28 with country timbering, 11 with turnery and 11 with modeling in clay.

Pedagogical manual tuition has branched out in three directions: the practical formal method which regards handicraft as a means to general culture; the direction advocated by those who aim at the so-called school-manual dexterity; and the system which would make the manual training serve as the basis of individual branches of teaching, and utilize these in order to influence the method of instruction in schools. The first two are becoming more and more amalgamated. In the third direction, Prof. Kumpa, at Darmstadt; School Inspector Scherer, at Worms, and Rector Brückmann, at Königsberg, Prussia, are at present engaged in making thorough experiments in public schools.

The participation of German teachers in the efforts of the German association is steadily increasing. Over 2,200 German teachers have up to now been taught to become instructors in manual training. Of these, 950 were taught in Leipzig and 1,250 acquired training in thirty-three places in other parts of Germany.

GEO. SAWTER,

GLAUCHAU, November 20, 1899. *Consul.*

CARBOLIC ACID AND THE WAR.

"Engineering" (England) says, in respect of the topic named in the heading: The chemical known as carbolic acid has had a considerable amount of attention attracted to it of late, and from a cause quite distinct from its legitimate use as a disinfectant or its illegitimate use as a weapon by those of suicidal tendencies. We refer to the royal proclamation published in the "London Gazette" forbidding the export of carbolic and cresylic acids, this being due to the fact that it forms the raw material from which the lyddite of South African notoriety is made. To consider a few general issues with regard to this chemical, it is noteworthy that the demand for carbolic acid for explosives manufacture increased rapidly in Germany about ten years ago, statistics which are available showing that in 1889 Germany imported 2,423,000 kilos., of which 2,267,800 kilos. came from England. As is pretty well known, this carbolic acid is obtained as one of the distillation products of coal tar, a body which, however, yields but 0.2 per cent. of the pure crystallized acid, and 0.3 per cent. of cresol. It is thus seen that 100 tons of tar have to be distilled to give a yield of 4 cwt. of carbolic

acid. As regards the production of tar itself, it cannot be said that the increased use of electricity for lighting purposes has given much of a blow to the gas industry, which is increasing its application for heating purposes, and the production of tar in England remains pretty much at the figure at which it stood a decade back, namely, 6,000,000 cwt. per annum. As a useful comparison, we may say that France produces, or did a few years ago, 1,000,000 cwt., and Germany 750,000 cwt., figures which show at once our great superiority in the market from which crude tar products are drawn. In the early days of the coal tar color industry in Germany the bulk of the raw materials came from England to be worked up into dyes in the factories of the Fatherland, and although this state of things has been altering year by year in the way of Germany producing more of her raw products, yet still a large trade in the raw materials for the color industry is done by us with the Continent.

To keep more particularly to carbolic acid, we may, perhaps, with advantage, put in a word as to its preparation from the tar. When crude tar is distilled, it is customary to separate the products into light oil, carbolic oil, creosote oil, anthracene oil, and pitch, and the carbolic acid is obtained from the carbolic oil fraction by agitation with caustic soda solution and subsequent acidifying with sulphuric acid, when the carbolic acid separates out as an oily layer. Although caustic soda has been generally used, it has been found possible, as in Hardman's process, to substitute lime and to decompose by a current of carbonic acid, and it is asserted that this gives equally good results, coupled, of course, with a saving in manufacturing cost. The crude carbolic oil containing, as it does, water, naphthaline, etc., has to be redistilled and a product is eventually obtained in the crystalline form. This is the material required for the explosives manufacture, the drainings from the crystals finding a market as carbolic acid for disinfecting, or after admixture with some absorbent material, forming the well-known carbolic powder.

With regard to the available supplies of carbolic acid, it may be pointed out that the oils extracted from blast furnace gases in Scotland and low temperature coke ovens, as well as those obtained by the distillation of shale, or from gas producers, do not yield crystallizable carbolic acid. This has been pointed out by Watson Smith, who has investigated the subject closely. From these sources material of a phenoloid nature can be extracted to a

much greater extent than from coal tar, but the phenol is not identical in both cases, and we cannot look upon the sources referred to as likely to be of assistance should any suddenly increased demand for carbolic acid be experienced. Not that there is any need to sound a note of alarm in regard to future supplies, but still the mere statement of the producers that the present production satisfies the world's needs cannot be taken as evidence that the situation will not undergo a change. It is hardly necessary to give the full text of the proclamation already mentioned, and which appeared in the "Gazette" of January 12 last, but, divested of legal nomenclature, its trend is to the effect that the following goods, capable of being converted into military stores, shall be prohibited to be exported from the United Kingdom, or carried coastwise, viz.: Picric acid (trinitrophenol), trinitro cresol, carbolic acid (phenol), cresylic acid (cresol). Although no reasons for this order have actually transpired, it is well understood in the trade that it has reference to the manufacture of lyddite, and more especially to a fear that the Germans would denude our markets of the materials mentioned, possibly with the object of serving the interests of the Boer forces. It is not our intention here to go into any detail with regard to the lyddite manufacture, but it may be said the picric acid or trinitrophenol is the principal body used, as it is also in the melinite factories of the French government, this explosive being picrate of ammonia. The use of picric acid in connection with the explosives manufacture is not of long standing, and in this country, at all events, the great explosion of fourteen years ago, which wrecked the chemical works of Messrs. Roberts, Dale & Co., at Manchester, caused considerable surprise, even among experts, as picric acid was not looked upon as dangerous. Picric acid, which is obtained by the action of nitric acid on carbolic acid, forms a yellow powder, which stains the skin deeply, and evidently this property is strongly developed in lyddite, to judge by the reports one sees in the newspapers with regard to its effects on those exposed to its vapors.

SPELLING REFORMERS.

A recent number of the *Rochester Democrat* denounces the so-called improvements with some apt illustrations.

It is somewhat alarming, the *Democrat* says, to learn that the advocates of "simplified spelling" (may confusion betide them!), "express gratification over the progress of the present year." But alarm is lessened by consideration of the somewhat inadequate cause of the rejoicing.

This is the alleged fact that the reformers have induced a few weak and misguided persons to pledge themselves to violently and arbitrarily misspell, as often as they can think of it, just twelve English words. At this rate the language is not in immediate danger from the attacks of the "fonetic spelers."

The great weakness of the spelling reformers is to be found in the fact that every misspelling they sanction and publish addresses to the mind of the reader, through his eye, a powerful argument against spelling reform. For example, take this resolution recently passed by a well-meaning educational body, as yet only slightly affected by the fad under consideration:

"*Resolved,* That in all words in which the amended spelling recommended by the American and the British philological associations is in accordance with the etymology of the word it be adopted in the publisht proceedings of this department; thus, spel, coud, sovran, foren, sithe, hole (entire), iland, gastly, &c."

Is it easy to recognize in these deformed strangers your old acquaintances "could, sovereign, foreign, scythe (this is a pure guess and may be incorrect), whole, island, ghastly"? Wouldn't you find any printed matter in which these misspellings should constantly occur far harder to read understandingly than it would be if these words were spelled correctly; that is to say, according to established custom? Do you suppose you would ever have the patience to puzzle through the carefully misspelled "publisht proceedings of the department"? Is not the department guilty of a folly when it carefully erects a gratuitous barrier between itself and the minds it seeks to reach by its publications?

There is a cogent argument against deformed spelling in these reformers' own collocation, "hole" (entire). It is, of course, necessary that the reader should be able, at a glance, to distinguish between "hole" (entire) and a hole in the ground. Isn't this neces-

sity met far more easily and simply by prefixing a "w" to the "hole" than by laboriously writing "entire" after it every time you want to express "whole"? Moreover, this new spelling of "whole" is not phonetic. "Whole" and "hole," correctly pronounced, do not sound exactly alike.

And this hole, this pitfall, into which the spelling reformers have put themselves, is but a mild type of a great class of similar difficulties into which these blind faddists are striving to lead us. Take the words "right," "write," "rite" and "wright" for examples. All these sound alike when spoken. The most careful speaker cannot effectually distinguish one from the other. Three of them contain silent and superfluous letters. The spelling reformers are bound to spell them all alike—"rite." So, if the faddists have their way, it will be necessary to add an explanatory note to each of these words similarly grouped by likeness of sound, whenever you use it in writing. Every book will be full of such sentences as: It is rite (proper), and, indeed, essential to the rite (ceremony) that the rite (artisan) shall rite (inscribe) his name.

Picture writing would be better than this sort of thing, more in accordance with the true theory of a visible language which demands that different ideas must not be expressed by similar symbols. It is to picture writing that the faddists will reduce literary English if they have their way. For the difficulty they will have created by their childish nonsense will be found intolerable. Nobody will read books full of such sentences as that above cited. No foreigners will study so clumsy and inadequate a language. The faddists will not meet this difficulty by returning to the old mode of spelling. That would be a violation of their principles and a confession of their folly. The only course open to them would be a resort to picture writing.

The next step in degradation would be the defeat and final extinction of the English language in that struggle for the survival of the fittest in which, so far, it has been steadily victorious, without the assistance of spelling reform faddists.

A CONSTELLATION OF BULLS.

A letter written during the Irish rebellion.

My dear Sir: Having now a little peace and quietness, I sit down to inform you of a dreadful bustle and confusion we are in

from these blood-thirsty rebels, most of whom are, however, thank God, killed or dispersed.

We are in a pretty mess; can get nothing to eat, nor any wine to drink, except whisky; and when we sit down to dinner, we are obliged to stand with arms in both hands: whilst I write this letter, I hold a sword in one hand and a pistol in the other. I concluded, from the beginning, that this would be the end of it; and I see I was right, for it is not half over yet. At present there is such goings on, that every thing is at a stand.

I should have answered your letter a fortnight ago, but it only came this morning. Indeed, hardly a mail arrives safe, without being robbed. Yesterday the coach with the mails from Dublin was robbed near this town: but the bags had been judiciously left behind, for fear of accidents; and by good luck there was nobody in the coach, except two outside passengers, who had nothing for the thieves to take.

Last Thursday an alarm was given, that a gang of rebels were advancing hither, under the French standard; but they had no colors, nor any drums except bagpipes. Immediately every man in the place, including women and children, ran out to meet them. We soon found our force much too little; and they were far too near for us to think of retreating; so to it we went: death was in every face; but by the time half our little party was killed, we began to be all alive. The rebels fortunately had no guns, except cutlasses and pikes; and as we had plenty of muskets and ammunition, we put them all to the sword: not a soul of them escaped, except some that were drowned in the adjoining bog; and in a very short time nothing was to be heard but silence. Their uniforms were all of different shapes and colors—in general they were green. After the action we rummaged their camp; all we found was a few pikes without heads, a parcel of empty bottles full of water, and a bundle of blank French commissions filled up with Irishmen's names.

Troops are now stationed everywhere round the country, which exactly squares with my ideas. Nothing, however, can save us but a union, which would turn our barren hills into fruitful valleys. I have only leisure to add, that I am in great haste. Yours truly, J. B.

P. S.—If you do not receive this in course, it must have miscarried, therefore write immediately and let me know.

PRESENT ATTITUDE OF BIOLOGISTS TOWARD NATURAL SELECTION.

By Prof. H. W. Conn, of Middletown, Conn.

From the "Christian Advocate," July 20, 1900.

The discussion of the theory of evolution is by no means ended. The problems which interest science to-day are, however, quite different from those of twenty or even fifteen years ago. The doctrine of organic evolution, involving as it does the descent of our present species of animals and plants from earlier species, involves two distinct questions. The first is the question of fact, the second the question of method. The first is the question whether species have actually arisen by descent; the second asks for the laws and forces which have brought the evolution about, if it has occurred. Until quite recently these two questions have not been sufficiently distinguished, and even to-day there is a too general tendency to regard a disagreement as to method the equivalent of a disagreement as to the fact.

So far as concerns the matter of fact the question is simply whether our present species have been derived from earlier ones by a process of descent, or whether each has been independently created. This matter is entirely independent of the laws and forces which have produced species, and has, therefore, no necessary connection with the well-known doctrine of natural selection. In regard to this matter of fact there has been reached an almost absolute unanimity of opinion. Among biologists the matter is to-day so thoroughly agreed upon that it is no longer even discussed. The theory of organic descent has become one of the foundation stones of modern biology. We sometimes hear it stated that science is saying less and less about evolution each year, that we hear less about the subject than we did a few years ago, and from this the inference is drawn that the theory is being slowly abandoned. While the facts are true, the inference is radically wrong. The reason that science is discussing the theory less commonly to-day than in earlier years is exactly the same as the reason why science no longer discusses the doctrine of gravitation. It is regarded as so nearly proved that it is unnecessary to atomic theory has become a part of chemistry. We shall hear no discuss it longer. It has become a part of biology, just as the

more discussion of the question whether species have been derived from earlier forms by descent, unless some entirely revolutionary discoveries are made, and this means that science to-day everywhere accepts the theory.

In regard to the question of method the matter stands quite otherwise. Upon this matter there is no unanimity. The reason why Darwin's name has been so properly associated with the doctrine of evolution is not because he was the author of the theory of evolution, for that theory long antedated his work. In the last century, and even before, the doctrine of evolution was conceived. Science did not receive the idea of the origin of species by descent very favorably in earlier years largely because it could not understand it and did not feel that it gave a much better comprehension of Nature than the idea of special creation. So long as nothing was known of the forces which caused new species to arise the theory of descent was no aid. But Darwin suggested a method which he thought explained the process of the origin of species. It was the doctrine of natural selection which he contributed to science, and not the theory of evolution.

From the time of the promulgation of this law of natural selection it has been the great topic of dispute and debate. It was the most general law ever suggested as affecting living matter, and in its consequences the most wide-reaching. The storm of opposition which arose at once was partly directed to the theory of evolution as a fact and partly toward the doctrine of natural selection as the method, for the two questions were not clearly separated. For a quarter of a century the heat of the conflict was too great to make calm judgment possible. But the violence of the debate has subsided, and we are becoming accustomed to the idea of evolution as a fact. It is now possible to take a view of the subject in a dispassionate manner. When we do this we find that the forty years' discussion has placed the doctrine of descent upon a pretty firm basis. But we find that the doctrine of natural selection is still subject to as vigorous opposition as ever, and that this topic is to-day, as it has been at all times since it was first suggested, warmly upheld by its advocates and vigorously assailed by its opponents. There is, however, much misunderstanding in regard to the sort of opposition which it receives.

Natural selection consists briefly of a chain of five links: 1. More animals are born than can find sustenance. 2. Hence there is a struggle for existence among them. 3. Animals are not alike, even

the children of the same parents showing variations. 4. In this intense struggle for existence those best fitted will survive, while the others perish. Hence the best variations only will live. 5. By heredity these survivors will transmit to their offspring the characters which gave them their advantage over their competitors. The next generation will thus all tend to inherit these favorable variations, and, therefore, the average characters of the next generation will be better fitted for the struggle than the last generation. By a continuation of this process the favorable variations will accumulate, and thus species will slowly but constantly change.

Now, this law of natural selection is absolutely beyond dispute. Just as soon as we understand it, it becomes a self-demonstrated truth, and no one pretends to criticise it. In all the criticism which has arisen in the forty years of discussion of Darwinism there has never been any attempt to deny this law of natural selection, at least from any one who really understands it. But there has been a large amount of criticism as to the efficiency of the law in producing the results attributed to it by Darwin and others. That natural selection is a force in Nature, no one, not even the opponents of Darwin, will pretend to criticise. But whether it is a force sufficient to account for organic evolution is a question by no means so easily answered.

During the three decades that followed Darwin's promulgation of this doctrine natural selection was very exhaustively criticised. But the criticism was directed not to showing that the law was false, but simply that it could not account for all the phenomena attributed to it. While it has ever been recognized as an active force, and one which explains much in the origin of species, it has been claimed that there are certain classes of facts which it does not explain at all, and that something else must be added to it in order to furnish us with a satisfactory account of the method of evolution. These objections to the sufficiency of natural selection began to be advanced almost as soon as the theory was published, and for twenty-five years they appeared to increase in weight as the subject was studied. It is impossible here to give the grounds for these objections. They were strong enough, however, to lead scientists, after twenty-five years, to believe that it would be necessary to find some other forces at work besides the law of natural selection, if they would have an understanding of evolution. But at the end of a quarter of a century, beginning with 1883, a rather surprising change of view occurred.

This change of view was due to the theory of heredity advanced by Wiesmann. This German zoölogist tried to explain the fifth link in Darwin's chain, and did so by a theory which was at once so simple, so well in accordance with facts, and so prettily confirmed by observation that almost from the beginning it was received by the biological world as expressing at least a partial truth. But one of the results of the theory was decidedly revolutionary. It made it impossible to believe that acquired characters are inherited. By this is meant that no effects produced in an individual during his life can be transmitted to his offspring. He can transmit only the characters he inherited; that is, congenital characters. No matter how large a blacksmith's arm may grow, as the result of swinging his hammer, his child inherits no larger muscles than other children. No matter if we do lose the use of our muscles by disuse, our offspring will not for this reason inherit smaller muscles. This conclusion, if accepted, removes from our reach a large class of agencies which biologists have relied upon in explaining evolution. Up to that time it had been believed that one of the causes of the evolution of species had been the direct action of the environment to produce changes in the individual, and hence, by heredity, upon the race. It is well known that changes in food and climate, as well as those of use, have great influence upon the individual. The tropical sun darkens the skin of the European, and the failure to use the muscle causes its degeneration or disappearance, as is shown by the fakirs in India. Now, it has always been supposed that such effects were inherited to a slight extent at least, and that by means of them the race is changed. The colored skin of the negro has time and again been explained in this way. The loss of eyes in the blind animals in caves or of the outer toes of the horse's foot have been explained as the result of disuse, and the large size of the remaining toe has been regarded as an example of enlargement due to excessive use. But with Wiesmann's theory of heredity all this is impossible, since use and disuse are acquired characters and cannot be transmitted. Hence it appeared that the only variations which could effect the process of evolution were congenital variations, and the only method of their preservation was natural selection. If acquired characters cannot be inherited, then natural selection of congenital characters is apparently the only force left for explaining the method of evolution. Thus it comes about that in recent years the followers of Wiesmann have come to place natural selection upon a

higher pinnacle than ever. They insist that since all other laws fail, while natural selection still stands, this law alone is sufficient to explain organic evolution. This school of scientists is sometimes called the Wiesmannian school, since it accepts Wiesmann's position, and is sometimes called the Neo-Darwinian school. The latter name has been given because, while basing evolution upon Darwin's law of natural selection, this school denies some of the other forces which Darwin recognized as playing a part in the process. This school not only regards natural selection as efficient, but as sufficient.

But by no means all biologists accept such a position. If they were unwilling fifteen years ago to give natural selection the weight which Darwin claimed for it, they are even more unwilling to give it the greater force demanded by the Neo-Darwinians. In the last fifteen years the discussion over evolution has centered chiefly around this question. On the one hand, some naturalists have tried to show that natural selection is wholly adequate to account for all classes of facts; and, on the other, their opponents have tried to show that there are quite a number of classes of facts which natural selection is absolutely inadequate to touch. All naturalists recognize it as a factor in the modification of species; but while some have insisted that it is all-sufficient, others deny this, and insist that other laws and forces must be discovered before we understand the origin of species. It cannot be stated that the matter is yet settled. During the fifteen years of discussion a large array of facts has been heaped up against the conceptions of the new school, and they have forced Wiesmann from time to time to abandon some of his original conceptions. At the same time he and many followers still adhere to the adequacy of natural selection to explain all classes of facts.

It is probably safe to say that to-day a majority of scientists feel that this doctrine of natural selection can no longer be considered as sufficient to explain the origin of species. While it is a powerful force, it leaves many unsolved problems. We sometimes hear it said that the biologist is giving up the doctrine of natural selection. Lord Salisbury, in an address printed in a former number of "The Advocate," held such a position, and even some noted biologists refer to natural selection as an abandoned theory. But these statements are very widely misunderstood. In the first place, they do not mean, as some have inferred, that science is giving up the belief in evolution. In the second place, they do not mean that

scientists are repudiating the value of Darwin's law. Biologists everywhere still recognize the law of natural selection as a very powerful law. Their objection to it is simply as to its all-sufficiency. The extreme position into which Wiesmann's theory of heredity forced the biologist, of relying wholly upon this law as the method of the origin of species, is proving untenable, and to-day there is a keen alertness to find some new laws and forces which can supplement natural selection.

It must not be conceived that the biologist is any nearer to accepting the old idea of direct design. Since he feels that something is needed besides natural selection, he is hunting for that something, and he has already pointed out several factors which supplement natural selection. He is to-day searching more laboriously among animals in Nature to discover the actual conditions attending the modification of species. He has confidence that some new laws which help natural selection are already within his grasp. It is impossible here to mention these newly discovered laws and forces. It is sufficient to say that if the biologist is less confident in the all-sufficiency of natural selection, he has something to put in its place.

We must not allow ourselves to believe that because science is inclined to deny the all-sufficiency of natural selection it has abandoned this well-known law. We must not conceive that science felt itself forced either to admit the sufficiency of natural selection or to go back to the design argument. Above all, we must not allow the disagreement among biologists as to the method blind us to the unanimity of their belief in the fact of organic evolution.

MEDICAL EXCERPT.

By T. P. Corbally, A. M., M. D.

Influence of Different Organs on Some Poisons.—The "Gazette Hebdomadaire" of July 29th takes from the "Semaine Médicale" the following concluding remarks on the experiments of M. George Brouardel, given to the Société Médicale des Hopitaux. M. Brouardel embodied with his experiments those of M. Thoinot. He says:

"I have made, in connection with M. Thoinot, a series of experi-

ments to determine the influence of some organs of the body on certain poisons. The method employed consisted in taking an organ from an animal killed for the purpose and triturating a definite quantity of it with a given dose of a poisonous solution, then filtering the solution through a piece of muslin and injecting the liquid thus obtained into a guinea-pig. Other animals received an equal quantity of a liquid resulting from the trituration of the same organs without the addition of the toxic solution. The poisons studied were the sulphate of strychnine, the hydrochlorate of morphine, arsenious acid and the sulphate of atropine.

"The result of these experiments with the organs was that some neutralized the poison, others increased their activity or were entirely inactive. There are, however, two of the viscera, the kidneys and the liver, that rendered all the poisons inactive, especially strychnine.

"The muscular tissue neutralizes a large proportion of the strychnine, but has less effect on morphine and atropine, while it increases the poisonous effect of arsenic.

"The cardiac tissue entirely prevents the action of strychnine and also of morphine, though in a lesser degree. It has no effect on atropine and slightly increases the poisonous effects of arsenic. The cerebral tissue neutralizes the poisonous effects of morphine and strychnine; it has no action whatever on atropine, but increases the poisonous effect of arsenic in a remarkable degree."

The authors have sought for an explanation of the action of some of the organs increasing the activity of some of the poisons, but have not been able to find any. They have compared this action with that found by M. Teissier, of Lyons, of the liver on some of the toxines.

Operative Asepsis and Disinfection of the Hands.—This subject continues to be warmly debated before the Société de Chirurgie. M. P. Delbet communicates to the "Gazette Hebdomadaire" (July 22) an account of experiments made, with the aid of M. Ravaut, which proves satisfactorily that the hands can be thoroughly washed, and, even when soiled articles are handled, the hands can be thoroughly disinfected by properly washing them. He has succeeded even in disinfecting the skin of the patient. Seven different experiments have enabled him to assert that, with the proper management of cultures, his hands, which had been in contact with different kinds of filth, were nevertheless strictly aseptic.

One of M. Delbet's experiments proved conclusively that if the hands become aseptic during the operation it is caused by germs deposited from the air and not from microbes contained in the glands of the skin. Without being absolutely opposed to the use of gloves, M. Delbet believes that the hands may be made perfectly clean by faithfully washing them.

M. Tuffier thinks it is proper to use gloves in operations in which there is some doubt about the cleanliness.

M. Lucas-Championnière proposes to show that asepsis is an excellent thing and that it should occupy a large place in modern surgery; but to be well done it requires the greatest care. He says:

"The hands ought to be washed with the greatest care in small basins with strong solutions highly concentrated of aseptic soap and even of other stronger solutions."

The hands when clean should be impregnated with phenic acid, one part to forty, or even one to twenty. The epidermis of the hand should be perfectly sound if no great inconvenience may be caused.

M. Championnière thinks he has reason to congratulate himself on his success, and he thinks it is impossible to do better. He accepts the use of gloves in cases in which much uncleanness exists. Asepsis is much more difficult to obtain than the immunity to be obtained from antisepsis.

SALICYLATE OF METHYL.—MM. Chatin and Guinard have made a pharmaco-dynamic analysis of this medical preparation, which is as poisonous as the salicylate of soda and causes serious disturbance in the cardiac rhythm, dyspnea, pulmonary œdema, general convulsions and hypersecretions of all the glands.—"Progrès Médical," July 14.

Would it not be proper, if not necessary, to apply similar tests to beer, wine and other articles known to be adulterated with salicylic acid?

CATARRHAL CONJUNCTIVITIS.—Dr. Milton P. Creel, of Central City, Ky., remarks ("Medical Summary") upon the treatment of this disease that:

"All and everything which produces irritation will render all the elements in the case worse. We must never employ strong solutions. A lotion composed of 10 grains of sulphate of zinc to

an ounce of distilled water will aggravate any case. All lotions must of necessity be mild and soothing.

"As a curative means I have come now to rely on what I term the antiseptic treatment. In carrying out this treatment I first have the nurse to bathe the eyes thoroughly with this antiseptic mixture:

℞ Hydrozone, ʒ j.
Aqua, q. s. ad ʒ iv.

"This mixture is used three or four times daily, as the case may appear to demand. Just as often as this mixture has been copiously applied and the eyelids have been dried, I apply, by means of an ordinary glass medicine dropper, two drops of Marchand's eye balsam. This remedy reaches every part of the conjunctiva by the movements of the lids, and it is not irritating; the patient generally makes rapid progress to recovery.

"By this treatment I have found my patients to recover in from thirty-six hours to three days. In fact, my success has been such that I now rely upon this treatment entirely in this affection.

"Four months ago an epidemic of catarrhal conjunctivitis broke out in a boarding school. I was called and ordered these remedies used on every case that presented itself. The nuns told me that all the cases got well speedily."

ACUTE FECAL POISONING.—An epidemic which broke out at the military school at St. Cyr, in France, has furnished to the "Archives Générales de Médecine," May, 1900, the facts to determine and describe the dangers that the fouling of drinking water with fecal matter causes.

The epidemic at St. Cyr was caused by a pipe containing fecal matter which emptied into the aqueduct from which the water from the military school was supplied, and caused the poisoning of the water by the leaking of the aqueduct. The most important symptoms manifested in the case of the students were vomiting, bilious diarrhœa, rhenal pains, severe colic, fever at 38° to 39° C., 100.4° to 102.2° F.

The bacteriological examination of the water showed the presence in large proportion of bacilli coli and the bacilli of putrefaction.

The writer of the article considers that the water used by the students was filtered or boiled and, therefore, attributed the epidemic at St. Cyr to an acute poison contained in the fecal matter.

Another epidemic of the same kind occurred in an asylum. This

had its origin in the fact that they used the water of a spring in which some country people had shortly before washed their hands, soiled with fecal matter.

A third epidemic occurred in a village of about 200 inhabitants after the arrival of some battalions of soldiers, who placed their fecal matter in trenches, which found a communication with the water supply of the people of the town.

The writer concludes that a great number of the epidemics of cholera of unknown cause must be attributed to the infection of drinking water with fecal matter.—C. Coggi, in the "Giornale della Reale Societa Italiana d'Igiene," June 30, 1900.

Some of the money lavishly spent on sources of public enjoyment could be very profitably spent on the protection of the water supply of our cities.

TREATMENT OF TUBERCULOSIS.—M. Laborde, who has great confidence in the treatment of tuberculosis with raw meat, has also recourse to certain medicinal preparations that have given him good results. ("Gazette Hebdomadaire," June 24th.) He has a decided preference for the subcutaneous injection of guaiacol.

Prof. Picot has, for a long time, given to the patients whom he is treating for tuberculosis hypodermic injections of iodoformized guaiacol in sterilized oil. This remedy is now prepared specially for that purpose by M. Sérafon, a reputable pharmacist, and is in daily use by the profession.

"The medicament that has given me the best results in the treatment of tuberculosis," says M. Laborde, "is guaiacol, which I employ in hypodermic injections, combined with eucalyptol and sparteine, in the following combination:

"Guaiacol, 20 grams; eucalyptol, 10 grams; sulphate of sparteine, 1 gram; oil of sweet almonds, q. s. ad 200 c.c. I inject first half a cubic centimeter of this solution and I increase the dose gradually to 5 and even 7 c.c. This injection may be renewed every two or three days without danger.

BUTTER IN CHRONIC CONSTIPATION OF CHILDREN.—H. Doerfler states that ("Münchener Medicinische Wochenschrift") chronic constipation in otherwise healthy children is, in most cases, not a disease but an obstruction of the intestines from too much food. This condition can be simply and effectively terminated by giving the child fresh butter, a half to a teaspoonful during the first two or three months of life until normal defecation is restored, and then this dose every second day. Between the third and

fourth month give two or three teaspoonfuls a day, until relieved, and then every second or third day. From five months to a year, one to three tablespoonfuls every two or three days; over this age, give as needed. The butter must be given unchanged; not warmed nor mixed with any substance, as this alters its composition. In an experience of six years every child has taken the butter with relish without exception. It increases the nourishing elements of the food in small compass, and is the nearest approach to milk; a part is readily assimilated and the rest is eliminated, stimulating peristalsis as it passes through the intestines. Pale, pasty children become red-cheeked and hearty, and the benefits of this butter treatment are evident up to the fifth and sixth year.

HEROIC THERAPEUTICS.—It is reported ("Medical Record") that as the result of a fall from the roof of his house speech has been restored to a man in Pittsburg who for fifty years had been unable to express himself in other than the sign language. The remedy seems an unnecessarily violent and dangerous one when it is known that hysterical disorders, as this can only be, are often readily and as efficaciously relieved by less vigorous suggestive treatment, such as bread-pills, hypodermic injections of water, applications of electricity, the laying on of hands, prayer, and other more recent and more fashionable delusions.

EDITOR'S TABLE.

SANITARIAN, SEPTEMBER, 1900.

☞All correspondence and exchanges, and all publications for review, should be addressed to the Editor, Dr. A. N. Bell, 337 Clinton Street, Brooklyn, N. Y.

BROOKLYN'S WATER SUPPLY.

The people of Brooklyn are elated at the recent announcement of the Chief Engineer of the Water Department that the danger of a water famine from exhaustion of the present source of supply is past. The shortage and danger of famine, with which he and other engineers of the department have been alarming the public, while they have been exercising their wit in devising a great engineering enterprise to obtain a supply from Lake George or some other distant source, are now discovered to be due to insufficient storage and conduits. A discovery which seems to have been evolved from the practical demonstration of the adequacy of the present source of supply by the commercial enterprise in

Suffolk county, in storing water for sale, undertaken soon after the description of the great "Long Island Water Basin" in THE SANITARIAN six years ago. But, after reference to the criticism on and attempted justification of the persistently alleged danger of a water famine from exhaustion of the source of supply, by the engineers of the department, he now attributes the shortness of supply to deficiency of appurtenances. He says:

"The demonstration of the shortage is extremely simple. Thus, on July 1 of the present year our total storage at Hempstead, Ridgewood and Mount Prospect, was 545,583,800 gallons, and on August 12 our storage at these same reservoirs had fallen to 293,360,100 gallons; thus showing a loss in forty-two days of 252,323,700 gallons, or at the rate of 6,005,088 gallons per day as an average; that is to say, that our consumption has exceeded our supply from July 1st to August 12th by 6,005,088 gallons a day on an average, and this deficiency, of course, had to be made up from our storage. The shortage in the supply is evident, and we will prove further on that we have been bringing to the city all the water we could deliver with our present conduit and pumping capacity.

AMOUNT OF WATER DAILY BROUGHT TO CITY.

"Have we been bringing to the city all the water we could deliver? Most certainly, and it is easy also to prove that by the record and in a few words. From the watershed east of Millburn, no matter what quantity of water our ponds and pumping stations may furnish, we cannot deliver more than about 40,000,000 gallons a day, that being the maximum quantity which our engines at Millburn can safely pump west through the present conduit. There have been seasons in past years when we could have supplied the whole city with the yield from the watershed east of Millburn, and yet we had to quietly submit to see the water go to waste for lack of adequate conduit capacity.

BUT WITH REFERENCE TO THE DRIVEN WELLS.

"One more and grievous error in the articles alluded to must be corrected. It has been asserted therein that the driven wells are practically inexhaustible, and that no matter how heavy the pumping, the underground level of the water remains unaltered. This is pure and simple fiction, which should not be allowed to take root in the public mind. Under a heavy and continuous draft, not only is the supply diminished and the underground water level considerably lowered, but the quality of the water is impaired to the

point of becoming unfit for public use through the influx of sea water and other causes. In fact, a careful analysis of the water and measurement of the levels in the wells as we pump, is indispensable to the proper management of these driven well stations. The problem of our future supply would be simple, indeed, if the yield of these wells were as large and as constant as falsely represented by those who know nothing whatever about the same.

"This statement contains nothing that has not been repeatedly published or that cannot be absolutely proved. Our records are complete, and as accessible as our works. The form only has been modified, even to the point of being trivial in the endeavor to avoid any honest misconception in a matter of such vital interest to our citizens.

"ROBERT VAN BUREN,
"Engineer in Charge.

"August 13, 1900."

But many of the "driven" wells are shallow wells, drawing water from the sand above the underlying hard-pan. These only, presumably, are subject to the influx of sea water.

THE ELMIRA REFORMATORY.

With some observation and considerable careful study of the management of this institution for more than twenty years, we are of the conviction that a grave mistake has been made by the recent change in the administration.

Excessive punishment of the inmates has been made the ostensible cause for the change, but knowledge of the institution and the obstacles with which it has had to contend from the beginning of its reformatory measures, shows that excessive punishment has been but rarely, if ever, exercised, and that it is the least of the causes that have led to the change.

Mr. Z. R. Brockway, the originator of the institution, who has been forced to resign the superintendency, founded it upon an education which he began nearly fifty years ago as assistant to Warden Pilsbury, in Connecticut, one of the foremost of prison reformers in the United States. From this he went to the House of Correction in Detroit, where he spent some time in an effort to establish a reform under recent laws—conformable to the prevailing system of maintaining criminals—which proved ineffectual. Hence he went to Elmira.

He had learned from his twenty years' observation and experi-

ence that mere punishment by confinement or otherwise was continuously debasing and devoid of reformatory effects. Moreover, he had acquired a comprehensive apprehension of the propensities of untutored intellects—of criminals in default of knowledge of any means of self-support. From these premises he discarded the perpetually debasing system hitherto practiced, and established instead reformatory measures with incentives to hope and ambition —practical inducements to well-doing: Mental and physical culture alike calculated to overcome defects of mind and body, and various trades as means of livelihood; in short, an educational and industrial school, and so well arranged as to admit of tickets of leave as awards of merit to diligent students.

But scarcely had the benefits of this admirable system gained public recognition when the trades-unions, of one kind or another, began a hue and cry against the products of contract labor. Legislative restrictions soon followed; and Mr. Brockway was taxed to his utmost ingenuity to find occupation for the inmates. But he found it—adding military drill, gymnastic exercise, music and amusements.

Discipline was, of course, an essential feature for the maintenance of the institution, as it is for all schools; but for none so much as for such a school as this—of a preponderating proportion of ill-developed and incorrigible youths who have never known authority and never before subjected to any restraint. Corporal punishment was exercised as the chief means, because, as all competent observers know, it is alike the most efficacious and the least injurious to the organism, as compared with bread and water, tying up and other tortures.

Penology is the last of all subjects in relation to the well-being of mankind that, from a scientific point of view, should be subject to judgment based upon knowledge derived from ex-convicts. The overthrow of the management of this institution was undertaken in the interest of criminals, with an anarchistic animus and iconoclastic purpose, because of its eminence and just repute, as the foremost institution of its kind.

Mr. Brockway was a pioneer in prison reform. His was, indeed, the first success in establishing a real physical and mental status among delinquent youth. By an originality of judgment he instituted practical measures of reform which have been appreciated and followed at home and abroad, and with such excellent results as to have made him a shining mark as a benefactor of

his race for a generation. For this he also became a shining mark for anarchistic malevolence among the class for whose elevation he had successfully labored. And this class, unfortunately for the credit of the newspaper press, secured the services of an iconoclastic tool which has finally succeeded in the accomplishment of its purpose.

Mr. Brockway, after several years' maintenance of a dignified silence, but open record and defence of his methods, has been compelled to resign his superintendency. But his reputation is quite safe. It is world-wide, and it will stand, as it has become an example among other nations and communities pre-eminently worthy of following, and as a challenge to his successor to emulate it.

His successor, Dr. Frank W. Robertson, enters upon his duties with the confidence of the new Board of Managers of the State Institutions—for there has been a comprehensive change, called "reform," throughout. The New York "Times" pertinently says of him and his cure:

"Dr. Robertson, the new Superintendent, has the confidence and good opinion of many of the leading physicians of New York City. He has had experience in Bellevue. He will be unwise if he enters upon his duties under any bias derived from the attacks made a few years ago upon Superintendent Brockway and recently renewed. The Elmira Reformatory is not a place where tearful penitents go about all day with faces uplifted in prayer, adjuring sin and proclaiming with the deep fervor of sincerity their high resolve to lead better lives. Within the walls of that institution are shut up some of the most depraved young savages on the face of the earth. Far more unmanageable than the experienced criminals of the prisons, full to the skin of 'gutter devil,' and with spirits quite unbroken, they are open to no appeal on the side of better nature, and yield to no influences save those of pain and fear. Mr. Brockway knew this very well. He was ferociously abused because he employed the only methods that he knew or that anybody knew to be effective, and he knew more than anybody else about those matters. Until a young reformatory patient becomes manageable and submissive his sojourn in the reformatory can do him no good. He will never be 'cured' of his criminal impulses, never be fit to go at large. That was the object of Mr. Brockway's policy. It will be the object of the new Superintendent's policy if he is to escape failure."

TO REVITALIZE AIR.

Apparatus That Removes Danger of Asphyxiation for the Miner and Diver.

Special Cable to the New York "Times."

Paris, Aug. 14.—Highly interesting demonstrations of the properties of bioxyde of sodium were given yesterday before the French Academy of Science. Bioxyde of sodium is found to possess the property of renewing the oxygen in air that has been breathed and in absorbing carbonic acid gas given off. Thus, with an apparatus containing the sodium, shown yesterday by Desgrey and Balthouard at the Academy, a diver can remain under water and walk about without having the air renewed by the jumping apparatus at present employed.

Moreover, by means of the new apparatus miners will be able to penetrate into poisonous gases and foul air, and firemen into smoke, without fear of asphyxiation. It will also render practicable submarine boats.

Ample proofs of all that is claimed for it were given yesterday at the Academy. Two men put on diving dress from which all air was excluded and remained inclosed two hours. Afterward the same men remained under water in the Seine during half an hour. The experiments are creating the greatest interest in scientific circles.

GARBAGE GATHERING.

The Supreme Court of Michigan holds, in City of Grand Rapids vs. De Vries, that the gathering of garbage is not a trade or occupation in any proper sense, and such employment does not come under the doctrine in reference to monopolies, or in reference to legislation in restraint of trade. It is a matter in which the public agencies are authorized to pursue the best means to protect the public health. Wherefore it holds that the business of handling and carting garbage through the public streets of a city is a business which the municipality may regulate for the benefit of the public health. No person has the right to carry garbage or other refuse matter through the streets of a city in open vessels. It is not a creation of a monopoly when the city from year to year licenses one or more persons to cart such garbage from and out of the city, specifying how it shall be done.

DARK TENEMENT HOUSE STAIRS AND THE AWARD OF DAMAGES.

The Appellate Division of the Supreme Court on July 18 decided that persons injured in falling down stairs in a tenement house in

which the hallways are unlighted are entitled to damages, and also that in case of its being a woman who is injured the husband may recover damages for the loss of the services and society of his wife. In a case in which a woman sustained serious injuries by falling down the stairway of a tenement house at night she brought suit and secured a judgment for $2,750, and her husband also brought suit and was awarded damages. The landlord of the house appealed from the decision of the lower court, but the Appellate Division upheld the judgments, citing the law which requires that in the city of New York a light shall be kept burning in the hallways on each floor of all tenement or lodging houses from sunset until 10 p. m.

REDUCTION OF SCHOOL CHILDREN.

The Chinese rid themselves of superfluous babies in one way, the red Indians in another, while still other methods are followed by various Polynesian tribes, but the good citizens of Boston, says the "Architect and Building News," prefer to do away with theirs by roasting. It is probably due mainly to the fact that no babe that sees the light first in Boston can be superfluous that the odor of roast infant does not often assail the sense of smell, but that does not affect the existence of the custom and due and adequate preparations for practicing its rites are made and perfected by the city authorities, firm believers in the Malthusian theory. The children are gathered daily in great buildings ready for the fire when the time is ripe for it to be lighted, and though a fiction of the law compels all buildings in which large numbers of human beings congregate to be furnished with fire escapes, these buildings, or some of them, where the children gather are furnished with folding fire escapes, vertical ladders hinged on one side and folding into a sheath: never opened, rusted and padlocked! Certain school-houses in Boston, on the testimony of Mr. Edward Atkinson, are in first-rate working order for the charring and vaporizing of superfluous children with a certainty and despatch which show how far in advance the civilization of Boston is over the practices of the ancient civilization of China. In glancing over a pamphlet, just issued, in which Mr. Atkinson reviews the record of fifty years of factory mutual insurance—a pamphlet we shall return to later—our attention was caught by a passage in which he speaks of his unavailing attempts to have improper fire-escapes on Boston school-houses replaced with proper ones, the passage closing thus: "These conditions have remained the same for about

twenty years. I sent one of my young men *an hour ago* [the italics are ours] to some of these school-houses, and there he found this so-called fire-escape in position, in one the padlock rusted and the janitor condemning it as utterly worthless, himself unable to unlock the ladder!"

PRIZE ESSAYS ON SCHOOL HYGIENE.

The National Educational Association offers prizes as follows: For the best essay submitted on each of the following topics: the seating, the lighting, the heating, and the ventilating of school buildings, $200; for the second best essay submitted on each topic, $100. Each essay shall be limited to ten thousand words and shall be submitted in printed or typewritten copy without signature, but with name of author inclosed with it in sealed envelope and addressed to the chairman of the committee, Mr. A. R. Taylor, at Emporia, Kansas. Three copies of each essay shall be submitted. They must be mailed not later than February 1, 1901. The essays and envelopes will be properly numbered for identification and the former forwarded to three experts to be hereafter appointed by this committee. Each expert will be ignorant of the appointment of the others, and their combined judgment shall determine the award. Should no essay on any topic be found worthy of an award and publication, the committee reserve the right to withhold the same. The committee reserve the exclusive right for the National Educational Association to copyright the prize essays and to publish the same for general distribution. The committee desire that each essay shall treat each topic independently and be complete in itself, no reference being made to statements contained in another essay. Generalities and speculations are not desired, neither are detailed technical formulæ and demonstrations. Each essay should present concisely and comprehensively the problem to be solved and the scientific principles involved; should discuss briefly the construction of the school building as related to the problem of sanitation in general and to the specific subject of the essay in particular; should describe in detail sufficient for the apprehension of the average teacher the conditions and mechanisms by which the best results may be obtained; should include figures and diagrams illustrating general plan and principles involved; should set forth methods and devices for detecting defects and suggest remedies for the same in buildings already constructed; should give references to a few buildings where the system has been adopted; and should be supplemented by a brief bibliography

of standard authorities on the subject discussed and a short list of manufacturers of approved devices and supplies for carrying out the plans advocated by the author. The essay on ventilation should include full suggestions concerning the use of disinfectants. Should the awards on two or more essays be made to the same person, he will be permitted to revise and unify the manuscript before publication by the committee.

PRIZE AWARDED DR. KNOPF.

A dispatch from Berlin, dated July 31st, announces that the prize of 4,000 marks offered by the Tuberculosis Congress for the best essay on the subject, "How to Fight Tuberculosis as a Disease of the Masses," has been awarded to Dr. S. Adolph Knopf, of New York. Eighty-one essays are said to have been offered in competition.

THE AMERICAN MEDICAL EDITORS' ASSOCIATION.

The officers elected for the ensuing year are as follows: Dr. Alexander Stone, of St. Paul, president; Dr. Charles F. Taylor, of Philadelphia, vice-president; Dr. S. W. Kelley, of Cleveland, treasurer, and Dr. O. F. Ball, of St. Louis, secretary.

TOO ILL TO BE NURSED.

The following, taken from a daily contemporary, has in it an element of grim humor not without significance: "It is the 'London Chronicle' that says, apropos of Mr. Burdett-Coutts's melancholy view of the South African hospitals, it is still lightened by humorous touches. A lady nurse rushing fervidly to her patients in a Cape Town hospital ward, found her favorite soldier fast asleep. Pinned to his coverlet was a scrap of paper on which he had laboriously scrawled: 'to il to be nussed today respectfully J. M.'"

NUMBER OF REGISTERED PHYSICIANS IN THE UNITED STATES.

The actual number of registered physicians in the United States, according to the most recent count, shows an average for the whole of about one to 647 inhabitants, but the proportion in the States varies greatly. California appears to be the State which is most liberally supplied, the proportion there being one physician to 420 inhabitants, while in Iowa nearly the same conditions prevail. On the other hand, in North and South Dakota and New Mexico the proportion was respectively one to 1,285, 1,296, and 1,391 inhabitants.

THE PAN-AMERICAN EXPOSITION, 1901; DEPARTMENT OF ETHNOLOGY AND ARCHÆOLOGY.

Members of the medical profession and others who are interested in the study of American ethnology and archæology, who have collections of Indian relics and skeletons, and who would give information or loan collections for the use of this department of the Exposition, are requested to correspond with A. L. Benedict, M. D., Superintendent of Ethnology and Archæology, Buffalo, N. Y.

REORGANIZATION OF THE NATIONAL RED CROSS ASSOCIATION.

In accordance with the act of incorporation passed at the last session of Congress and approved by President McKinley on June 6th, on July 10th the National Red Cross Association was reorganized.

The American association has been in existence since 1881 under the provisions of the Geneva Convention, and for the last twelve years has been aiming at national recognition. At this meeting the old association passed out of existence and a new advisory body was chosen. The officers of the Red Cross were entertained by Miss Barton at her home at Chevy Chase.

The following were elected as members of the new board, the first five named to serve for three years, the second five for two years, and the remaining five for one year: Clara Barton, B. H. Warner, Stephen E. Barton, Mrs. Ellen Spencer Mussey, Walter P. Phillips, of Connecticut; William Flather, W. H. Michael, Samuel E. Jarvis, of New York; A. C. Kaufman, of South Carolina; Joseph Gardner, of Indiana; General Daniel H. Hastings, of Pennsylvania; Mrs. J. Ellen Foster, Mrs. James Tanner, H. B. F. Macfarland and Mrs. Phœbe Hearst, of California.

THE BENEFICENT SPIDER.

Since the mosquito has been found out and we know (Journal of the American Medical Association) that, while masquerading as a mere nuisance, she is a deadly enemy, it is well to take stock of our insect friends that are, in a measure, our protectors from her attacks. It is well known that the dragon-fly is an enemy to mosquitoes, but we have been apt to overlook another less attractive ally. Dr. O'Connell, of the British Army, calls attention to the usefulness of the despised or hated spider as a protector of mankind against the disease-bearing mosquito. The general opinion held by us of these fellow creatures of ours has been a

distinctively unfavorable one. The late Grant Allen, who, as a popularizer of natural history, can probably be accepted as a fair exponent of the prevalent views, while claiming for them a very high place among animals with jointed bodies, is quoted as describing them as "ferocious, cruel, bloodthirsty, shining examples of abandoned and shameless wickedness." It is the spider, however, who builds for us, unasked and unthanked, a web against the malarious mosquito. If only let alone, it would bar every passage. Its intellectual endowments—perhaps the highest among articulates—are such that it knows how to seize each point of advantage in its beneficent work. Morally, the spider is no worse than those human parasites, the dog and the "harmless necessary cat," but its appearance and manners are less attractive, and for this reason, therefore, it loses all the credit of, and advantage from, the good it does ungrateful mankind. It was a spider that saved Bruce, but this one good deed is all that is recorded in history to its credit. The innumerable lives it may have saved from malignant mosquitoes and infection-bearing flies should be reckoned in its account.

MEDIÆVAL SUPERSTITION IN NEW YORK.

From the "Christian Advocate."

Over ten thousand persons went to the French Canadian Church of St. John the Baptist, in this city, in a single day recently to view a portion of a bone from the right arm of St. Anne. The piece of bone is in a small silver case with a glass top. On a Thursday there was an hourly mass, and after each service those who chose viewed and kissed the box. On the feast day of St. Anne it is taken out of the shrine and is in charge of one of the priests. The person seeking relief bows and kisses the box, and then the priest touches the person on the eyes, arm, or leg, wherever the seat of the disease is located. Those seeking relief light a candle; for a moment this is placed in the candelabra and then removed. Mothers were there with sick babies; cripples hardly able to walk, even with crutches, went up, and after the relic was applied they would make heroic efforts to walk out of the church without the crutch or cane. One girl, a paralytic, was almost carried to the church by her parents; after she had kissed the relic and had it applied to her body, she made a mighty effort to walk out of the church, and took three steps. Great was the enthusiasm, the people believing that one of the reputed miracles had been performed; but she had done too much, and fell fainting to the floor. A poor

boy whose lower limbs were withered visited the relic five times in an afternoon. As is usual every year there are many reports of wonderful cures. There are racks on which persons are supposed to hang their crutches.

Great is the revenue of the church from this relic, which was given to Father Tetreau in 1892 as a gift from the Benedictine monks of St. Paul's, Rome, and is certified to as genuine by Archbishop Corrigan and others. Notices are posted in the church that in order fully to participate in the benefits, each person should make the novena and pay fifty cents for special mention in the prayers the night before the relic is exposed. If we are correctly informed, the candles cost ten cents, and the worshiper at each service buys one; many money offerings are made in addition.

Such a performance in the city of New York seems strange. In South America, in some parts of Italy, and in most parts of the Roman Catholic world, it is a part of the life of the people, and worn-out shrines can be found. At Lourdes we fell in with a representative of a neighboring shrine, who said that previous to the "vision of our Lady" there equally large crowds went to it, but now the rush was all this way.

But a great many Protestants are unable to point the finger of scorn at this performance. There is Simpson, a past-master in this kind of quackery, and Dowie, the difference between the two being that the former has magnetic persuasiveness and the latter overwhelming bumptious dominativeness; and Schlatter, with his head, hair, and face resembling the traditional portraits of Christ, and Sanford in Maine, and the Mormons, all curing diseases and all having the same limitations and relapses, and all their performances perfectly explicable upon natural principles. And there are the Christian Scientists, the most superstitious of all. That God may heal diseases in answer to prayer cannot be successfully disproved by anyone, but to reject the use of means is an insult to God who established the relations of cause and effect.

TRADES UNIONS AND PHYSICIANS.

As a natural suggestion from recent events that have largely occupied the attention of the public, it may not be out of place to casually notice the charge frequently made, and recently elaborated by a labor periodical, that the medical profession is organized and acts on trades-union principles. The chief basis for this is the desire and effort of the profession for laws regulating medical practice, which, the trades unionist assumes, correspond to his

own methods. If trades unions required nothing more than that a man should know his business, and did everything in their power to multiply their competitors; if they set up free dispensaries for giving out their services gratis; if they never struck, and, least of all, when their services were most demanded, and did a large part of their work gratuitously for the deserving and the undeserving, made no limits as to hours, but served willingly at all times, pay or no pay, then there might be some comparison between them and the medical profession. As the case stands, it is the grossest misrepresentation to say that there is any resemblance between them whatever. A strike of doctors in time of an epidemic or emergency would be a sight for gods and men, an interesting object-lesson of the beauties of the procedure, and would call into action the vicarious virtue of the social reformers as nothing else could. Even an attempted organization against the dead-beats to refuse them credit, works up the lay press into virtuous indignation against the inhumanity of the mercenary doctors. No one would wish the medical profession to repudiate any of its honorable traditions or become less altruistic in its motives and methods. It would be directly in the right line, however, if a very large proportion of its members could adopt a self-denying ordinance against taking professorships and multiplying medical colleges. —The Journal of the A. M. Association.

ANTI-TYPHOID INOCULATION.

In a recent issue of the "Lancet" an interesting statement is made by Dr. A. E. Wright, of the Army Medical School, of the results obtained by the anti-typhoid inoculations among the cases of enteric fever in the beleaguered garrison of Ladysmith. A second inoculation is believed to add considerably to the protection obtained, but at Ladysmith few were inoculated a second time. There were in the garrison 1,705 inoculated persons and 10,529 who were not inoculated. Of the former but 35, or 1 in 48.7, had enteric fever, while of the uninoculated 1,489, or 1 in 7.07, had the disease. As to deaths, but 8, or 1 in 213, of the inoculated died, while of the uninoculated 329, or 1 in 32, died of the fever. The material employed was a "sterilized typhoid culture." If the lesson the figures seem to teach is correct the British physicians cannot too soon begin to act upon it in the hospitals at Bloemfontein, where the mortality in typhoid cases has been as high as 21 per cent., or, for that matter, in London hospitals, where the average mortality from typhoid is higher. It has been said that the rate of mortality

from this fever in Lord Roberts' army is exceptional, but a correspondent of the London "Times" points to the fact that while in London hospitals the death rate among patients of all ages and both sexes works out at 16.25 per cent., among male patients of the same age as soldiers the rate is 22.35 per cent. It will be observed that typhoid fever and enteric are spoken of as substantially the same disease.

SPECTACLES WITH WHICH TO SEE IN THE DARK.

Amid other curious inventions chronicled (The New York "Times") it is announced that an Italian physician, Dr. Teiro, has, within the last few days, happily perfected an invention of the utmost importance, namely, spectacles wherewith one can see in the dark and that so minutely as to be able to read a paper, to seek tiny articles on the floor, ground, etc. These spectacles consist of coupled concave-convex lenses between which is a pellicle, the origin and preparation whereof is the secret of the inventor. A French syndicate has recently purchased the invention for the enormous sum of 1,000,000 francs, to be partly in cash and the remainder in stock of the society under construction. Another Italian invention is that of the civil engineer, Joachim Rossi, of Catania, Sicily, captain in the Italian naval department service, who has devised an instrument to which he has given the name of navipendulum, because it permits the calculation of the rolling of ships, even in stormy seas. Thanks to the use of this apparatus, a naval engineer can calculate prior to building a projected ship, the major or minor grade of stability she will really have at sea. The fact that many vessels prove after completion of insufficient stability and some even subject to unexpected catastrophes by reason of such defect, conclusively demonstrates the value of this new experimental method of research and the utility of the navipendulum for all ship builders. The most noted technical reviews of Great Britain, such as the "Shipping World," "Shipping and Mercantile Gazette," "Naval and Military Record," the "Engineer," etc., have treated diffusely of the important invention of the young and modest scientist, who does honor to the Italian navy, some publishing his entire treatise, others describing the apparatus and placing its photograph before their readers, together with the portrait of its inventor. The Italian Secretary of the Navy has provided at state expense for the construction of the navipendulum, intrusting it to the Laboratory Galileo of Florence, overcoming no slight difficulties to render the

apparatus an instrument of precision, of colossal dimensions and perfectly successful in the working of all its several parts.

MORTALITY AND MORBILITY REPORTS AND REVIEWS.

STATE OF NEW YORK: The sanitary districts into which the State is divided are as follows: *Maritime District,* includes New York, Brooklyn, Long Island, Staten Island and Westchester County; *Hudson Valley District,* all the counties on either side of the Hudson River, except Westchester, to and including Albany and Rensselaer; *Adirondack and Northern District,* the northern section of the State, the counties of Washington, Warren, Hamilton, Essex, Clinton, Franklin, St. Lawrence, Jefferson and Lewis; *Mohawk Valley District,* Schenectady, Schoharie, Saratoga. Montgomery, Fulton, Herkimer and Oneida Counties; *Southern Tier District,* the seven counties along the southern border of the State; *East Central District,* Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga and Cortland Counties; *West Central District,* Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee and Wyoming Counties; *Lake Ontario and Western District,* Oswego, Wayne, Monroe, Orleans, Niagara and Erie Counties.

The State Board of Health Bulletin for June, 1900, reports the number of deaths for the month to be 9,444—1,513 less than the preceding month, the death rate having decreased from 17.5 to 15.5.

Maritime District, 3,935,000: Total deaths, 5,706; death rate, 18.3; deaths under five years, 2,183; from zymotic diseases, per 1,000 from all causes, 145; from cerebro-spinal meningitis, 27; typhoid fever, 36; malarial diseases, 17; scarlet fever, 30; smallpox, 1; measles, 83; erysipelas, 26; whooping-cough, 39; croup and diphtheria, 197; diarrhœal diseases, 371; acute lung diseases, 729; consumption, 654; cancer, 201.

City of New York, 3,654,394: Total deaths, 5,307; death rate, 17.6; deaths under five years, 2,083; from cerebro-spinal meningitis, 27; typhoid fever, 35; malarial diseases, 15; smallpox, 1; scarlet fever, 28; measles, 81; erysipelas, 26; whooping-cough, 37; croup and diphtheria, 188; diarrhœal diseases, 343; acute lung diseases, 692; consumption, 616; cancer, 187.

Borough of Manhattan, 2,007,241: Total deaths, 2,782; death rate, 17.0; deaths under five years, 1,043; from cerebro-spinal meningitis, 12; typhoid fever, 19; malarial diseases, 4; scarlet fever, 13; measles, 29; erysipelas, 16; whooping-cough, 16; croup

and diphtheria, 92; diarrhœal diseases, 118; acute lung diseases, 396; consumption, 396; cancer, 113.

Borough of the Bronx, 174,370: Total deaths, 305; death rate, 21.0; deaths under five years, 90; from cerebro-spinal meningitis, 1; typhoid fever, 1; malarial diseases, 1; smallpox, 1; scarlet fever, 3; measles, 6; erysipelas, 2; whooping-cough, 5; croup and diphtheria, 14; diarrhœal diseases, 11; acute lung diseases, 21; consumption, 83; cancer, 8.

Borough of Brooklyn, 1,267,258: Total deaths, 1,892; death rate, 18.3; deaths under five years, 830; from cerebro-spinal meningitis, 13; typhoid fever, 12; malarial diseases, 5; scarlet fever, 12; measles, 44; erysipelas, 8; whooping-cough, 16; croup and diphtheria, 77; diarrhœal diseases, 186; acute lung diseases, 235; consumption, 161; cancer, 58.

For the first time since the consolidation of Brooklyn with the greater city the large infant mortality among the tenements in July resulted in the appointment of a summer corps of physicians to search out and treat the sick in the tenements. The number of deaths of infants under five years during the third week in July was 554—10 more than for the previous week.

Borough of Queens, 136,559: Total deaths, 217; death rate, 19.5; deaths under five years, 81; from cerebro-spinal meningitis, 1; typhoid fever, 3; malarial diseases, 4; measles, 1; croup and diphtheria, 2; diarrhœal diseases, 25; acute lung diseases, 25; consumption, 23; cancer, 7.

Borough of Richmond, 60,266: Total deaths, 111; death rate, 19.5; deaths under five years, 39; from malarial diseases, 1; measles, 1; croup and diphtheria, 3; diarrhœal diseases, 3; acute lung diseases, 15; consumption, 12; cancer, 1.

"Taking the Garbage for an Airing."

"What a pity they could not do as much for the children," the New York "Journal" (August 9th) suggests, and describes the process:

In the harbor of New York all through the year you may see huge scows dragged along to the deep water five miles out at sea, and dragged back again—after unloading the city garbage.

Thousands and hundreds of thousands are spent annually to take the garbage out to sea.

The class which rules and directs feels that it is important for the garbage to take that ocean trip and get away from the city.

In the crowded streets of New York, in this hot weather, you may

see thousands of children suffering from the heat. Half the children born die in infancy for lack of care, and especially for lack of fresh air in summer. What a fine thing it would be if those with power could take as deep an interest in infant life and infant health as they now take in the garbage question.

Whatever is needed now for garbage purposes is cheerfully supplied, tugs and men and money—freely.

How would it be to spend a little more, hire a few more tugs, build some big municipal floating playgrounds or nurseries and tow them out to sea on these hot days?

Suppose every mother with an ailing child could walk to a municipal dock, board one of the floating playgrounds and spend the day on the water. It would not be very expensive—and since we now do it for garbage, we could do it for children also if we cared as much for the city's children as for the city's garbage.

To neglect garbage would mean to damage the health of the prosperous class. The rich could not live in New York if the city were not kept reasonably clean. Therefore the city IS kept reasonably clean.

Report to the authorities the fact that a dead dog lies in the street before your house—that dead dog is immediately carted out to sea. Report to the authorities that a thousand children are dying around you for lack of fresh air—those children are NOT taken out to sea.

A dead DOG is important. Its carcass threatens the health of those who make laws—and especially those who enforce laws.

A dying CHILD is not important. Its sufferings worry no one save its mother.

Let us hope that in time society will take as deep interest in the dying children as in the dead dogs of a great city.

Let us hope for the sake of general peace that society will do this freely of its own accord, and from decent feeling.

It MUST be done one way or another. There is more danger for society in persistent ignoring of human suffering than in many dead animals.

The French Revolution should have taught that lesson. But such lessons apparently are learned very slowly.

Hudson Valley District, 700,000: Total deaths, 853; death rate, 14.5; deaths under five years, 150; from cerebro-spinal meningitis, 5; typhoid fever, 8; malarial diseases, 2; scarlet fever, 1; measles, 7; erysipelas, 4; whooping-cough, 16; croup and diph-

theria, 13; diarrhœal diseases, 29; acute lung diseases, 69; consumption, 117; cancer, 38.

Albany, 100,000: Total deaths, 112; death rate, 13.6; deaths under five years, 13; from cerebro-spinal meningitis, 4; typhoid fever, 1; croup and diphtheria, 3; diarrhœal diseases, 7; acute lung diseases, 13; consumption, 15; cancer, 11.

Adirondack and Northern District, 390,000: Total deaths, 358; death rate, 11.2; deaths under five years, 50; from cerebro-spinal meningitis, 1; typhoid fever, 1; malarial diseases, 1; measles, 4; diphtheria, 1; diarrhœal diseases, 3; acute lung diseases, 49; consumption, 41; cancer, 22.

Mohawk Valley District, 395,000: Total deaths, 412; death rate, 12.5; deaths under five years, 60; from cerebro-spinal meningitis, 1; typhoid fever, 2; scarlet fever, 1; measles, 4; erysipelas, 1; croup and diphtheria, 6; diarrhœal diseases, 10; acute lung diseases, 35; consumption, 38; cancer, 21.

Utica, 55,000: Total deaths, 86; deaths under five years, 12; measles, 1; croup and diphtheria, 3; diarrhœal diseases, 1; acute lung diseases, 8; consumption, 10; cancer, 5.

Southern Tier District, 425,000: Total deaths, 441; death rate, 13.0; deaths under five years, 68; from typhoid fever, 7; scarlet fever, 3; measles, 4; whooping-cough, 2; croup and diphtheria, 8; diarrhœal diseases, 6; acute lung diseases, 48; consumption, 26; cancer, 25.

Binghamton, 45,000: Total deaths, 58; deaths under five years, 5; from typhoid fever, 1; scarlet fever, 3; croup and diphtheria, 4; acute lung diseases, 9; consumption, 4; cancer, 4.

Elmira, 40,000: Total deaths, 38; deaths under five years, 7; from typhoid fever, 2; diphtheria, 1; diarrhœal diseases, 1; acute lung diseases, 4; consumption, 3; cancer, 2.

East Central District, 415,000: Total deaths, 421; death rate, 12.2; deaths under five years, 62; from cerebro-spinal meningitis, 1; typhoid fever, 3; malarial diseases, 4; scarlet fever, 2; measles, 10; whooping-cough, 3; croup and diphtheria, 6; diarrhœal diseases, 13; acute lung diseases, 32; consumption, 54; cancer, 25.

Syracuse, 120,000: Total deaths, 127; death rate, 12.7; deaths under five years, 22; from cerebro-spinal meningitis, 1; typhoid fever, 1; measles, 6; diphtheria, 1; diarrhœal diseases, 4; acute lung diseases, 11; consumption, 16; cancer, 7.

West Central District, 325,000: Total deaths, 339; death rate, 12.6; deaths under five years, 38; from cerebro-spinal meningitis, 1; typhoid fever, 3; scarlet fever, 2; measles, 6; whooping-cough,

2; diphtheria and croup, 4; acute lung diseases, 23; consumption, 35; cancer, 16.

Auburn, 35,000: Total deaths, 35; deaths under five years, 11; from measles, 4; diphtheria, 1; acute lung diseases, 4; consumption, 3; cancer, 3.

Lake Ontario and Western District, 890,000: Total deaths, 914; death rate, 11.2; deaths under five years, 190; from cerebro-spinal meningitis, 3; typhoid fever, 5; malarial diseases, 1; scarlet fever, 5; measles, 6; erysipelas, 3; whooping-cough, 9; croup and diphtheria, 8; diarrhœal diseases, 43; acute lung diseases, 73; consumption, 105; cancer, 49.

Buffalo, 370,000: Total deaths, 362; death rate, 11.9; deaths under five years, 99; from cerebro-spinal meningitis, 2; typhoid fever, 4; scarlet fever, 2; measles, 3; whooping-cough, 3; croup and diphtheria, 2; diarrhœal diseases, 28; acute lung diseases, 29; consumption, 39; cancer, 18.

Rochester, 180,000: Total deaths, 145; death rate, 10.0; deaths under five years, 25; from typhoid fever, 1; scarlet fever, 2; diarrhœal diseases, 12; acute lung diseases, 10; consumption, 28; cancer, 9.

Total for the whole State, 7,400,000: Total deaths, 9,444; death rate, 15.5; deaths under five years, 3,101; from cerebro-spinal meningitis, 39; typhoid fever, 65; smallpox, 1; malarial diseases, 26; scarlet fever, 44; measles, 120; erysipelas, 40; whooping-cough, 71; croup and diphtheria, 243; diarrhœal diseases, 477; acute lung diseases, 1,058; consumption, 1,070; puerperal diseases, 90; diseases of the digestive system (not diarrhœal), 874; diseases of the urinary system, 705; diseases of the circulatory system, 807; diseases of the nervous system, 1,057; cancer, 397; accidents and violence, 637; old age, 358; unclassified, 1,265.

California.—Los Angeles, 103,000: Report for the month of June: Total deaths, 151; death rate, 17.5; deaths under five years, 32; from specific infectious diseases, 29; diphtheria, 1; typhoid fever, 6; cerebro-spinal fever, 3; consumption, 27; acute lung diseases, 13; cancer, 8.

Connecticut.—The State Board of Health Bulletin reports 1,121 deaths in June, in 167 towns aggregating 911,579 inhabitants. This was 109 less than in May and 73 more than in June, 1899, and 109 more than the average number of deaths in June for the five years preceding. The death rate was 15.0 for the large towns, 14.0 for the small towns, and for the State, 14.7.

The deaths from communicable diseases numbered 150, being 13.3 per cent. of the total mortality. There were 291 deaths under five years. From diphtheria and croup there were 27 deaths; scarlet fever, 3; measles, 16; cerebro-spinal fever, 6; whooping-cough, 8; erysipelas, 4; typhoid fever, 13; malarial fever, 9; diarrhœal diseases, 61; consumption, 107; acute lung diseases, 93.

DISTRICT OF COLUMBIA.—294,674—89,288 colored. Report for four weeks ending July 28: Total deaths, 683; death rate, 30.09; deaths under five years, 312; from diphtheria, 1; scarlet fever, 1; typhoid fever, 21; sunstroke, 24; diarrhœal diseases, 156; consumption, 61; acute lung diseases, 17; cancer, 24.

FLORIDA.—Tampa, August 3—August Weedon, of the State Board of Health, to-day issued a statement to the effect that there has been one death at Tampa from yellow fever, and that there were two cases known at present.

ILLINOIS.—Chicago, 1,750,000: Report for May: Total deaths, 2,088; death rate, 14.63; deaths under five years, 638; from diphtheria and croup, 58; measles, 36; scarlet fever, 26; smallpox, 1; typhoid fever, 19; whooping-cough, 27; diarrhœal diseases, 21; erysipelas, 9; consumption, 250; acute lung diseases, 395; cancer, 72.

KANSAS.—The State Board of Health reports for the quarter year, ending June 30, as follows: Total deaths from all causes, 1,706; from diphtheria, 14; measles, 16; smallpox, 18; scarlet fever, 8; typhoid fever, 30; whooping-cough, 30; cholera infantum, 45; dysentery, 19; pneumonia, 120; consumption, 146; cancer, 52.

LOUISIANA.—New Orleans, 300,000—90,000 colored: Total deaths during the month of June, 698—283 colored; death rates, white, 23.71; colored, 37.73; total, 27.92; deaths under five years, 215—81 colored; from diphtheria, 2; typhoid fever, 17; malarial fevers, 13; smallpox, 41; acute lung diseases, 28; consumption, 86; cancer, 11.

Care of Lepers in Louisiana.

The State Legislature of Louisiana has added $5,000 to the $20,000 appropriated one year ago to purchase the site and erect suitable buildings for the care and treatment of the lepers of the State. The present hospital is only leased for a definite time and is inconveniently situated. The Board of Control of the Leper Home in-

tends to purchase a site as near New Orleans as possible, in order that every facility may be had for treating these unfortunates. The board applied for an increase of $20,000, but succeeded in getting but $5,000.

MARYLAND.—Baltimore, 541,000. Report for June: Total deaths, 819—230 colored; death rates, white, 15.26; colored, 35.38; total, 18.16; deaths under five years, 321; from diphtheria and croup, 10; scarlet fever, 1; typhoid fever, 9; measles, 4; whooping-cough, 8; acute lung diseases, 82; consumption, 76; cancer, 24.

MASSACHUSETTS.—Boston, 555,057: Report for June: Total deaths, 786; death rate, 16.99; deaths under five years, 235; from diphtheria, 32; scarlet fever, 10; whooping-cough, 4; typhoid fever, 4; measles, 12; acute lung diseases, 97; consumption, 91; cancer, 44.

MICHIGAN.—The secretary of the State Board of Health reports for the month of July, 1900, compared with the average for July in the ten years, 1890-'99, measles, scarlet fever and typhoid fever were more prevalent, and remittent fever, intermittent fever and inflammation of bowels were less than usually prevalent. Consumption was reported present at 175 places; measles at 123 places; scarlet fever at 100 places; typhoid fever at 83 places; diphtheria at 37 places; whooping-cough at 37 places; smallpox at 9 places, and cerebro-spinal meningitis at 8 places. Consumption reported present at 3 places more; measles at 32 places less; scarlet fever at 3 places more; typhoid fever at 31 places more; diphtheria at 7 places less; whooping-cough at 7 places less; smallpox at 1 place less, and cerebro-spinal meningitis at 2 places less than in the preceding month.

The number of deaths reported to the Secretary of State for the month was 2,507—561 under one and 141 one to four years of age. Annual death rate, 12.4.

Important causes of death were reported as follows: Consumption, 134; other form of tuberculosis, 42; typhoid fever, 36; diphtheria and croup, 10; scarlet fever, 18; measles, 14; whooping-cough, 28; pneumonia, 84; diarrhœal diseases of children under five years of age, 278; cerebro-spinal meningitis, 24; cancer, 108; accidents and violence, 197.

Detroit, July 12.—The Health Department (?) is again in an uproar. Two or three claiming to have been elected health officer, but none officially recognized, and the president of the board acting

as such. He submitted his report yesterday. Among other things he says that there was called to his attention a case of a man "broken out and pustulated about whose affliction the city physicians were in anxiety and doubt." He states that he directed the removal of the man to the detention hospital, "where he made a good and quick recovery from his complaint." He made a further report concerning a case of diphtheria. His report closes with a dissertation on the proper care of cows.

MINNESOTA.—Minneapolis, 240,000: Report for June: Total deaths, 130; death rate, 8.60; deaths under five years, 38; from cerebro-spinal fever, 3; diphtheria, 3; scarlet fever, 1; typhoid fever, 1; whooping-cough, 2; smallpox, 2; pneumonia, 5; consumption, 15; cancer, 7.

St. Paul, 165,000: Report for June: Total deaths, 121; death rate, 9.07; deaths under five years, 40; from diphtheria and croup, 3; typhoid fever, 2; acute lung diseases, 9; consumption, 19; cancer, 8.

Winona, 24,000: Report for the year ending March 31, 1900: Total deaths, 283; death rate, 11.5; deaths under five years, 108; from diphtheria, 1; typhoid fever, 5; pneumonia, 27; consumption, 21; cancer, 10; old age, 33.

Dr. Bracken's report on smallpox in the State shows a total of 1,164 cases, with 27 deaths, since January 1, 1899. The disease appeared in 105 localities. Minneapolis had 377 cases and 10 deaths. The doctor attributes the appearance of the disease in 21 different counties and 47 localities in the State to the lax methods of the Minneapolis Health Department.

MISSISSIPPI.—Meridian, August 7.—At a meeting of the Executive Committee of the State Board of Health, held here, an order was issued declaring a quarantine against the city of Tampa, Florida.

MISSOURI.—St. Louis, 540,000—37,000 colored: Report for the year 1899: Total deaths, 10,022; death rate, 15.48; deaths under five years, 3,005; from diphtheria and croup, 241; smallpox, 5; scarlet fever, 38; measles, 15; whooping-cough, 59; typhoid fever, 131; cerebro-spinal fever, 149; malarial fevers, 148; diarrhœal diseases, 515 (451 under five years); erysipelas, 26; bronchitis and pneumonia, 1,283; consumption, 1,091; cancer, 297.

Report for the month of June: Total deaths, 753; death rate, 13.95; deaths under five years, 249; from diphtheria, 25; scarlet

fever, 7; measles, 7; typhoid fever, 8; malarial fevers, 12; diarrhœal diseases, 82 (72 under five years); bronchitis and pneumonia, 88; consumption, 65; cancer, 31.

NEW JERSEY.—Hudson County, 398,960: Report for June: Total deaths, 685; death rate, 20.6; deaths under five years, 232; from diphtheria and croup, 19; typhoid fever, 4; diarrhœal diseases, 21; total zymotic diseases, 61; bronchitis and pneumonia, 49; consumption, 62.

Newark, 250,000: Report for four weeks ending July 28: Total deaths, 444; death rate, 23.06; deaths under five years, 231; from diphtheria, 6; scarlet fever, 3; typhoid fever, 3; bronchitis and pneumonia, 25; diarrhœal diseases, 120; consumption, 34; cancer, 9.

Paterson, 97,344: Report for June: Total deaths, 125; death rate, 12.38; deaths under five years, 47; from diphtheria, 2; scarlet fever, 3; typhoid fever, 2; diarrhœal diseases, 15; acute lung diseases, 10; consumption, 12; cancer, 3.

NORTH CAROLINA.—The State Board of Health Bulletin reports for the month of June, from twenty towns having a population of 146,050—59,549 colored, 197 deaths, of which 89 were colored and 68 under five years of age. The death rates were: White, 14.9; colored, 17.8; total, 16.2; from typhoid fever, 5; malarial fever, 5; measles, 3; pneumonia, 7; consumption, 14; diarrhœal diseases, 35.

OHIO.—Cleveland, 395,000: Report for June: Total deaths, 435; death rate, 14.06; deaths under five years, 173; from diphtheria and croup, 7; scarlet fever, 5; typhoid fever, 10; smallpox, 3; acute lung diseases, 49; consumption, 5; cancer, 7.

PENNSYLVANIA.—Philadelphia, 1,266,832: Report for four weeks ending August 4: Total deaths, 2,140; death rate, 21.1; deaths under five years, 935; from diphtheria and croup, 50; scarlet fever, 8; typhoid fever, 38; measles, 26; acute lung diseases, 103; consumption, 195; cancer, 74; diarrhœal diseases, 330; sunstroke, 76.

Annual report for the year ending December 31, 1899: Total deaths, 23,796; death rate, 18.78; deaths under five years, 7,056. Some of the principal causes of death were: Croup and diphtheria, 994; scarlet fever, 132; typhoid fever, 948; cerebro-spinal fever, 146; consumption, 2,818; pneumonia, 2,424; influenza, 290; heart diseases, 1,482; apoplexy, 842; cholera infantum, 726.

Pittsburg, 320,000: Report for four weeks ending July 28:

Total deaths, 589; death rate, 23.9; deaths under five years, 318; from diphtheria and croup, 8; scarlet fever, 4; measles, 11; typhoid fever, 19; diarrhœal diseases, 128; acute lung diseases, 26; consumption, 21; cancer, 21.

SOUTH CAROLINA.—Charleston, 65,165—36,295 colored: Report for four weeks ending July 28: Total deaths, 132—101 colored; death rates, white, 13.95; colored, 36.14; total, 20.04; deaths under five years, 41—37 colored; from diarrhœa, 10; typhoid fever, 8; consumption, 13.

TEXAS.—Austin, July 17: State Health Officer W. F. Blunt stated to-day that he will continue to maintain the rigid quarantine against San Francisco until all danger of bubonic plague reaching Texas from that city is passed. He says that sixteen deaths from the plague in San Francisco have been officially reported to him, the last death occurring on July 4, and one suspicious death since then, investigation of which is not completed.

UTAH.—Salt Lake City, 70,000: Report for June: Total deaths, 60; death rate, 10.28; deaths under five years, 26; from zymotic diseases, 9; respiratory diseases, 6; tuberculosis, 1; cancer, 2.

VERMONT.—Greensboro, August 8.—The fear of an epidemic of smallpox in Northern Vermont continues to increase. There are cases of the disease not only at Hardwick, where it supposedly originated, but also at Waitsfield, Troy, Lowell, Westfield, Newport, St. Johnsbury, Morrisville, Lyndonville and possibly other places in Orleans, Caledonia and Lamoille counties. The infected towns are widely separated. All the cases are believed to have been caused by communication with Hardwick.

WASHINGTON.—Seattle, 90,000: Report for June: Total deaths, 46; death rate, 6.11; deaths under five years, 8; from scarlet fever, 2; typhoid fever, 2; diphtheria, 1; acute lung diseases, 4; consumption, 5; cancer, 3.

MANILA—DEATH STATISTICS.

The Surgeon-General of the Army has recently received from the chief surgeon on Gen. MacArthur's staff a copy of a report compiled by direction of Major Edie, of the Manila Board of Health, giving death statistics for Manila from October, 1899, to June, 1900. The most interesting part of the report deals with the statistics of bubonic plague from January to June. It shows a total of 901 cases of bubonic plague during the six months, of

which 696 died. The progress of the disease is shown as follows: January, 27 cases; February, 78 cases; March, 143 cases; April, 197 cases; May, 218 cases, and June, 238 cases. The record of mortality from October to June, inclusive, showed a total death list of 8,535, of which 3,507 were children under five years. The number of deaths gradually diminished from November, when it was 1,235, to 1,165 in December; 1,055, in January; 884, in February; 887, in March; 805, in April; 724, in May, and 559, in June. The death rate for 1,000 of population during this period of nine months, estimating Manila's population at 490,000, was 17.3. Of the deaths, diarrhœal diseases claimed the greater number of victims, being 1,073; tuberculosis caused 992; beriberi caused 642 deaths; malarial diseases caused 338; acute lung diseases caused 639; typhoid fever caused 41, and leprosy, 46.

30,000 LEPERS IN PHILIPPINES.

Washington, August 14.—Surgeon-General Sternberg has received a report from Major Guy L. Edie, President of the Board of Health in Manila, stating that the Board of Health is considering a plan to segregate all the lepers on one island, where hospitals and other suitable buildings can be erected for their care. The report states that leprosy was introduced in the Philippines in 1633, when the Emperor of Japan sent 150 lepers to the islands. Since the number has increased until the estimate is that there are 30,000 lepers in the archipelago, largely in the Vasayas. In a recent inspection of Manila, 100 lepers were found concealed in various houses, while many others escaped to the country.

YELLOW FEVER IN CUBA.

Washington, August 3.—Gen. Wood, at Havana, has reported the following deaths from July 20 to July 30:

Santiago, 30th, Private Harry Shafer, A, Fifth Infantry, typhoid fever; Columbia Barracks, 23d, Private John Schrantz, A, Second Artillery; Pinar del Rio, 21st, Commissary Sergeant Francisco Docasenbroot, First Infantry; 25th, Private Edward Welch, H, First Infantry, and Corporal William Fisher, G, First Infantry; Matanzas, 25th, Private John Stoner, F, Second Cavalry—all yellow fever.

Yellow fever has broken out among the soldiers of the First Infantry in Pinar del Rio Province, Cuba. Nine deaths have occurred and 11 cases are now (August 3) under treatment. This regiment is now under orders to return to the United States. All

the affected commands have been moved into camps and quarantine is being enforced. Arrangements have been made by which all equipments belonging to this regiment will be disinfected and stamped by the Marine Hospital authorities at Havana before being placed on board transports for return to this country.

REMARKABLE MORTALITY AT PONCE.

Washington, August 14.—Assistant Surgeon King, the Marine Hospital Service official at Ponce, in a report just received says that in Ponce City and surrounding country for the two weeks ending July 28th the enormous death rate has slightly increased. There were 216 deaths, against 70 births, during this same period. An investigation into the remarkable mortality is being conducted by the Superior Board of Health.

THE BUBONIC PLAGUE.

By the most recent reports received up to August 15:

In London (August 3), 4 cases, with two deaths; no danger of its spreading.

In Bombay, since the beginning of the epidemic, September, 1896, till May 11, 1900 ("Indian Medical Gazette") there have been 392,578 recorded cases and 308,172 deaths, in the Bombay Presidency alone. Out of this large number there had been only 202 cases and 59 deaths of Europeans in the same presidency.

More recent reports show no abatement. During the four weeks, May 20th to June 16th, there were reported in Bombay 829 cases, with 574 deaths. In Smyrna, May 7th to July 9th: 17 cases, with 6 deaths. In Djeddah, from the beginning of the outbreak, 81 deaths; June 17th to July 9th, 5 deaths. In Port Said, week ending July 6th, 3 cases, 2 deaths; in all since outbreak, 87 cases, 34 deaths. In Alexandria, 11 cases, 8 deaths; 1 case (fatal) first week in July. In Sydney, since invasion, July 29th to June 12th, 295 cases, 98 deaths. "Public Health" reports: Hong Kong, May 20th to June 23d, 307 cases, 278 deaths. Rio de Janeiro, May 6th to June 30th, 224 cases, 97 deaths. Tamsui (Formosa), June 1st to June 14th, 76 cases, 65 deaths.

In China, to add to the horror of the situation, comes the news (New York "Medical Journal") that the Oriental plague is spreading alarmingly in Pekin, and that there are many cases in Tien-Tsin. The melancholy consolation remains, however, that, if the reports of the massacre in Pekin are true, it is only the fiendish murderers that will suffer from the disease in that city.

BOOK REVIEWS.

PROGRESSIVE MEDICINE—Volume II, 1900. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College, Philadelphia. Octavo, handsomely bound in cloth, 401 pages, with 81 engravings. Lea Brothers & Co., Philadelphia and New York. Issued quarterly. Price, $10 per year.

An examination of this, the second volume of the 1900 series of "Progressive Medicine," reveals the very practical lines which have been followed by its contributors.

Dr. Coley, in his article on "Surgery of the Abdomen, Including Hernia," treats of one of the newest and most interesting phases of modern surgical practice, namely, operations upon the stomach. With admirable detail this able authority describes the diagnostic symptoms, the methods of operating, treatment and the management of convalescence. Appendicitis is next considered, the merits of a newer method of operating being carefully investigated. Bassini's operation in hernia is described; and other operations upon the intestines, colon and liver are exhaustively considered in the aspects of operation and results. Abdominal tumors and the methods for their diagnosis come next, and this is followed by a most interesting consideration of the use of the X-ray in detecting abdominal calculi. The illustrations given in this section, as in fact is the case throughout the volume, are most helpful.

Dr. John G. Clark gives an admirable résumé of the progress made in gynecology during the past year. The various topics discussed are too numerous for special mention.

Dr. Stengel covers a list of diseases from which arise a large proportion of human ills, following the preliminary pages in which the diagnostic value of the varying conditions of the blood is dealt with. Such pathological conditions as anemia, chlorosis, leukemia, etc., are practically considered.

Dr. Jackson, in treating of his specialty, considers the requirements of the general practitioner rather than those of the specialist in ophthalmology. He has endeavored to so equip the practitioner with the most recent knowledge in this branch of medicine as to enable him to successfully treat the majority of cases which may

come before him. In short, the articles in this volume are full of practical information to an extent but rarely equaled.

ANATOMY, PHYSIOLOGY AND HYGIENE. By JEROME WALKER, M. D., Lecturer upon Anatomy, Physiology and Hygiene at the Girls' High School and the Commercial High School, Brooklyn.—New edition, entirely rewritten, with original and carefully selected illustrations. 12mo. Pp. 440. Price, $1.20. Boston: Allyn & Bacon, 1900.

The paramount importance of hygiene as a subject of early education was urged by Herbert Spencer in his famous essay on "What Knowledge Is of Most Worth?" more than forty years ago. But how to teach it, based as it essentially is upon a knowledge of anatomy and physiology, has been ordinarily beyond the scope of knowledge required of school teachers. Moreover, the difficulty has been increased during recent years by the laws of several States requiring that special instruction be given in the common schools on the effects of alcoholics and narcotics—requiring practical knowledge of therapeutics in addition to the science of hygiene.

Dr. Walker, as a mature medical practitioner and for many years lecturer and sometimes examiner on the subjects of his treatise, has had exceptional facilities for acquiring practical knowledge of the receptive capabilities of the schools in this regard; and he has well used this knowledge in the lucid abstract of the science of anatomy and physiology as necessary to constitute an intelligible basis for a practical knowledge of personal hygiene. Though a threefold subject, he has so woven it together as to show its oneness in his main purpose—the building up and maintenance of a healthy organism.

The composition of the body, the arrangement and adaptation of its several parts and the functions of each part are described in their sustaining relations to each other under "the pervading influence of life."

Next follows a description of the different phases of life, the liability to contagious diseases and how these are prevented.

The whole is divided into twenty-one chapters. Following the subjects just above noted: Muscular exercise; the skin and kidneys; bathing; clothing; digestion; food; air; the nervous system; the senses—sight, hearing, etc., the voice, and emergencies, are the chief headings. The chapters on foods, dietetics and di-

gestion are particularly noteworthy for their comprehensive and practical relations to the varying conditions of life and livelihood of individuals, families and collective bodies of men.

The chapter on emergencies, with which the volume concludes, comprehends a concise and easily remembered description of means and measures more or less liable to become necessary to everybody in the vicissitudes of life and without a knowledge of which education is deficient in its most essential feature—an ever available source of usefulness in time of need.

Alcoholics and narcotics are discussed throughout in connection with their demonstrated ill effects on the tissues and impairment of the organic functions, by the most celebrated physiological chemists and other authorities, with no justification of their use under any circumstances, except as medicine. Each chapter is followed by a series of questions well calculated to fix the subject treated of in the memory.

It is admirably illustrated, alike in excellence of execution and suitableness, and, taken altogether, it is the best elementary book on physiology and hygiene that has ever been brought to our notice.

FOOD FOR THE SICK AND HOW TO PREPARE IT, WITH A CHAPTER ON FOOD FOR THE BABY. By EDWIN CHARLES FRENCH, M. D. 12mo. Pp. 180. Price, $1. Louisville, Ky.: John P. Morton & Co.

Without pretension to originality the author of this book has made excellent use of a thorough physiological appreciation of the relation of foods to the requirements of the body in sickness and their differentiation with reference to particular diseases. The selections are twofold: Of the foods appropriate and allowable in certain states of the system, and of those disallowed, such as would be injurious. Besides the selections from the best authorities, the author makes a number of important additions of articles and preparations from prime sources of reliability and some from his own observation, which have not been generally made known heretofore; "receipts that have been gotten together at a great expense of time and money, that have been collected from the head nurses of hospitals all over the country, many having been contributed by well-known physicians, none of which are to be found in the ordinary cook book." For this reason specific directions are given how to prepare foods for the sick, each article being taken severally under its proper classification: Soups, fish, meats, bread, farina-

ceous foods, jellies, eggs, drinks—wine, etc.—making it complete, the practicability of each receipt having been thoroughly tested by a competent cook.

The chapter on "Food for the Baby" is lucid and practical.

Altogether, it is a concise and commendable manual to the physician or nurse and so devoid of technicalities as to be alike commendable to mothers.

CONTEMPORARY LITERATURE.

THE AMERICAN MONTHLY REVIEW OF REVIEWS for August, in its gist of "The Progress of the World" during the previous month, gives just so much of the platforms of the political parties as every good citizen should bear in mind for the next three months if he would keep apace with the evolutions of the contestants.

The article on "The Chinese Revolution," by Stephen Bonsal, is a cogent historical sketch of its causes and of

THE GROWTH OF THE BOXERS.

"There is no doubt," he says, "that the genesis and the wonderful spread of the Boxer Society were spontaneous. There seems to exist in China, as well as in the West, great ignorance of the tenets of the Boxer faith, which have proved so popular, so inflammatory—so vitalizing, I had almost said—since, whether for good or for evil, it is undeniable that they have galvanized the corpse of China into very unpleasant and most unexpected manifestations of life.

"Looking back over the history of China during the last generation, we find much support for the theory that the Boxer insurrection has not been fomented either by the Peking authorities or by agitators in the pay of a foreign power. When, in 1860, the Imperial Chinese Government was discredited abroad and weak and powerless at home, the Taiping Rebellion swept over the central provinces of the empire very much as the Boxers are doing in the North to-day. It may be, as some think, that the Taipings, as well as the Boxers, organized primarily for booty alone; but, at the same time, they have both found it wise and popular to put into their platform a plank pledging themselves to the most radical and energetic treatment of the 'foreign devil' question. . . . Among those who have cast anchors to windward, first and fore-

most are undoubtedly the Empress Dowager, Prince Tuan (the father of the heir apparent), and possibly even Prince Ching. But with the exception of Prince Tuan, there is no reason to believe that any prominent official in Peking instigated the rebellion. The Dowager Empress naturally tried to keep on good terms with such a formidable body of her subjects. At the same time it is probable that she tried to keep the agitation within legal bounds, and protect the foreigners from their ferocity until by doing so she endangered her own position.

THE DOWAGER EMPRESS AND THE ANTI-FOREIGN MOVEMENT.

"A few days ago I received a letter from Peking that was mailed before the outbreak—upon which, however, it sheds some light. It was written by a member of one of the foreign legations, and consequently echoes the opinion of the best-informed diplomatic circles in Peking; but, as my correspondent was aware that I am acquainted with the tortuous, undignified, and most unreliable channels through which the foreign legations receive the greater part of their information of what is occurring in the Purple Forbidden City of the Palace, he adds: 'Of course, it may be a yarn; and yet, there is much confirmation of the story to be found, if you examine closely the events of the last three months.' The yarn that has wandered into Legation street is to the effect that the Dowager Empress has joined the Boxers. Certain it is she has recently received many members of the organization with every appearance of marked favor. When a high official, a censor from the Province of Chi-li, was enjoying an audience lately, she is reported to have inquired:

"'What is your opinion of the Boxers? Do you think they would join my troops to expel the foreign devils?'

"'I am certain of it,' replied the censor. 'Our high purpose is set forth in the tenets of the society: "Protect, to the death, the members of the Heavenly dynasty." We are organizing and arming; we will be prepared.'

"'I am afraid you will get us into serious trouble before the country is ripe for an uprising. You Boxers of Shantung and Chi-li need conservative leaders,' she added.

"But the Empress was none the less pleased; for the next day she promoted the censor to be governor of Peking."

AMERICA'S DUTY IN CHINA.

In the August number of the "North American Review" John Barrett, who was United States Minister to Siam during Presi-

dent Cleveland's last administration, discusses at length the question of "America's Duty in China" at the present momentous crisis. More depends, in Mr. Barrett's judgment, upon the action of the United States than upon the action of any other nation, inasmuch as America is the only nation present in China to-day that enjoys the confidence of the European governments and of China and Japan. Mr. Barrett lays great stress upon the necessity of making a strenuous effort to keep China intact, and in any case to preserve there an "open door" for the commerce of the world. He suggests that the President has an opportunity of creating a doctrine which shall be historically associated with his name and shall rank with the Monroe Doctrine.

"Shall not the McKinley doctrine in China mean that America shall stand with all its strength for the permanent maintenance of the open door in China—an open door through which the diplomat and the traveler, the missionary and the merchant, the engineer and the educator, shall pass and repass forever in safety?

"As corollary to the main proposition, shall not the McKinley Doctrine in China mean that America shall stand with all its legitimate moral influence to prevent any Power whatsoever, monarchical or republican, acquiring sovereignty over any extended part of the present unpartitioned area? And, possibly, in the growing power and name of our good land, this use of moral influence, to the full extent of its lengthening tether, may in a peaceable way accomplish as much in Asia, as the use of moral and armed force, which the Monroe Doctrine involves, can accomplish in America."

"THE SILENT SOUTH."

Within the last half century at least two gatherings of national importance have assembled in Montgomery, Alabama. The first was the Confederate Congress, in 1861, which was a result of measures which had been taken to dissolve the relations existing between the Southern States and the rest of the Union. The second was the Southern Conference for the Discussion of Race Conditions and Problems in the South, held in May, 1900, thirty-nine years later. Of the latter, Booker T. Washington writes in the August "Century":

I consider that this conference represents in a large measure the "Silent South." For years we have heard the voice of the north, the voice of the negro, the voice of the politician, and the voice of the mob; but the voice of the educated, cultivated white

South has been too long silent. No matter what our own individual feelings and wishes may be, when it comes to a consideration of hard cold facts we must agree that the Southern white man is an important factor in any settlement of the race problem.

The programme presented at the first meeting of the conference occupied three days. There were nineteen speakers, all Southern men except two. Of these not more than four made speeches that any one could consider antagonistic to the highest interests of the negro. There was but one speaker who seemed to oppose the education of the negro. There was a difference of opinion as to the exact form, and perhaps the amount of education that should be attempted, but that the negro should be educated in some manner there was virtual agreement among all who took part in the conference; and on the subject, "The Duty of the Nation and the South to Educate the Negro," the Hon. J. L. M. Curry, a Southern man, an ex-slaveholder and an ex-Confederate, delivered one of the most eloquent addresses that it has ever been my privilege to hear. To have given the opportunity for this address alone, in the Black Belt of the South, it seems to me was worth the holding of the conference. On the subject of religion, of course, there was virtual unanimity. Every one is in favor of salvation for the negro, in the future world; it is only the salvation of his mind and body in this world that causes disagreement.

Upon one other subject the conference appeared to be well-nigh unanimous—that the negro should and would remain in the South.

"WHAT KNOWLEDGE IS MOST WORTH."

In the continued series of articles on "Modern College Education," in "The Cosmopolitan," David Starr Jordan, president of Leland Stanford, Junior, University, contributes an article to the July number, "A Consideration of Herbert Spencer's Essay on Education," under the title as above quoted forty years ago: "And the schoolmen of that day in England and America were thrown into dismay by this question and its implication. For to many the idea had never occurred that any knowledge had any worth whatever. The value of higher education in their eyes was mainly that of class distinction. It marked out its possessor as one above the common mass. It was the badge of having done The Proper Thing. It conferred for life upon the men who received it the same satisfaction which is ascribed to the Well-Dressed Feeling among women. To demonstrate its excellence required no analy-

sis of its component parts. For it was prescribed by the highest authority known to the average Englishman, the authority which has granted him the blessings of royalty, of nobility, of ecclesiasticism—the authority of Tradition. And over higher education in England forty years ago tradition exercised undisputed sway. The badges of higher education were then of two sorts—the pass badge, which conveyed social prestige only, and the honor badge, which guaranteed intellectual precedence, as none could bear it save after the severest competitive struggles. Whether these struggles were in themselves worthy, whether the senior wrangler had fought for anything of value to himself or to any one else, few people gave themselves the trouble to inquire. The honor of wrangling was its own reward.

"But these few who did inquire led the intellectual progress of the nation, and to their thoughts and questionings the epoch-making essay of Herbert Spencer gave voice. 'What knowledge is of most worth?' That knowledge may have intrinsic value, Mr. Spencer insists. If this be true, the value of some knowledge is greater than that of some other. Furthermore, as life is short, and force is limited, the useful knowledge should take precedence over the less useful, the real over the conventional, the effective over the ornamental.

"Mr. Spencer proceeds to 'classify in the order of their importance the leading kinds of activity which constitute human life. These may be naturally arranged into: 1. Those activities which directly minister to self-preservation. 2. Those activities which, by securing the necessities of life, indirectly minister to self-preservation. 3. Those activities which have for their end the rearing and discipline of offispring. 4. Those activities which are involved in the maintenance of proper social and political relations. 5. Those miscellaneous activities which make up the leisure part of life devoted to the gratification of the tastes and feelings.'

"These categories of effort are thus arranged, Mr. Spencer claims, in something like their true order of subordination. It is evident that without personal sanity and safety, there can be no care for others. It is clear that the development of the family precedes that of the state, and that the performance of personal duties in general has first claim over the enjoyment of art and the cultivation of the pleasures of leisure. It is again evident that 'acquirement of any kind has two values—value as knowledge and value of discipline,' and both these values must be considered in estimating their final influence on conduct.

"In the matter of self-preservation, the common animal instincts are sufficient to warn us against the grosser dangers. But the less evident evils are not the less real, and against many of these natural instinct offers no protection. This is especially true of the dangers which arise from the complexities of social life, into which our gregarious impulses tend to drag us, for with most men the instinct to follow the mass is more powerful than the animal instincts of warning. The evils of bad food, bad air, of the use of stimulants and narcotics, of dissipation and vice, are matters which an educated will ought to help us to avoid. On all sides we find chronic ailment or physical weakness which wisdom should have prevented. Hence our education should strive to give wisdom. Weariness, gloom, waste, ill-health, due to avoidable causes, are met everywhere about us, yet against these our system of education provides no adequate safeguard.

"'Is it not clear,' says Mr. Spencer, 'that the physical sins, partly our forefathers' and partly our own, which produce this ill-health deduct more from complete living than anything else?' Besides the deterioration of life, we have the shortening of existence. 'If we call to mind how the average duration of life falls below the possible duration, we see how immense is the loss. When to the numerous partial deductions which bad health entails, we add this great final deduction, it results that ordinarily more than one-half of life is thrown away."

"From this Mr. Spencer concludes 'that, as vigorous health and its accompanying high spirits are larger elements of happiness than any other things whatsoever, the teaching how to maintain them is a teaching that should yield in moment to no other whatever."

But no abstract of this admirable advice can show its value. It deserves to be read by every educator in the country, and should be.

"THE URGENT NEED OF PURE FOOD REFORM."

"The Outlook" for June 16th contains an article on this subject, by Harry B. Mason, Ph.G., eminently worthy of the attention of legislative bodies:

"To convey a comprehensible notion of food adulteration, it may be said that in general it falls within two classes—one simply fraudulent, the other harmful. The first class may properly be considered in detal before passing on the second. As instances of fraudulent adulteration, then, may be mentioned the sale of

"pure Mediterranean olive oil," which is mostly or wholly cotton-seed oil; of butter which is either oleomargarine, or rancid butter "renovated" or made over; of liquid honey which is mostly glucose; of coffee which is mostly chicory; of tea composed mostly of exhausted leaves; of wheat flour composed partly of bran and corn-starch; of buckwheat flour composed partly of rye and other cheaper cereals; of milk which has been robbed of its cream; of lemon and vanilla flavoring extracts made without lemon or vanilla; of currant jellies made from apple-parings; of baking powder composed almost wholly of starch "filler," alum, and acid phosphates; of prepared mustard which contains often as high as seventy per cent. of starch, colored with turmeric; of pepper and other spices which are for the most part made up of hulls, rice, corn, wheat, and the like; of lard made out of cottonseed oil and tallow; of cheese which is "filled" cheese; and of other things truly and literally too numerous to mention.

Such adulteration as this, though it sometimes exercises a certain insidious harm to health which I shall consider further on in this article, is, in the main, harmless so far as health is concerned. The one great charge to be made against such adulteration is that it is dishonest, and that by means of it the food manufacturers of the United States rob the people annually of millions of dollars. And, in the main, it is not the rich who are so robbed; the rich are able to jay high prices and get purer products; the poor, who must needs buy as cheaply as possible—they are the ones who are made to suffer loss, and they are the very ones least able to suffer it."

"THE NEW YORK MEDICAL JOURNAL."

Owing to the financial trouble of D. Appleton & Co., the "New York Medical Journal" has been sold, the new owner being Mr. A. R. Elliott, owner and publisher of the "American Druggist," who conducts an advertising agency in New York. We are glad to note that Dr. Frank P. Foster, its efficient editor, has been retained. The "New York Medical Journal" is one of the old reliable journals of this country, has always been ably edited, and is recognized as one of the leading medical weeklies. It was started as a monthly in April, 1865, with Dr. William A. Hammond as editor. In 1871, the late Dr. Wm. T. Lusk and Dr. Jas. B. Hunter assumed the editorial management, these being succeeded by Dr. Frank P. Foster, in 1880, who has edited it since. In January, 1883, the journal was changed from a monthly to a weekly. D. Appleton & Co. became the publishers in 1868.

The JOURNAL OF SURGICAL TECHNOLOGY is the title of a new periodical, to be published monthly, beginning July 1, 1900; devoted to the consideration of the technique of surgical procedures, at a subscription price of $1.00 a year. Valuable premiums are offered with the first subscriptions. Address the Technique Publishing Co., 404 East 14th St., New York City, N. Y., for sample copy.

PAMPHLET REPRINTS, REPORTS, ETC., RECEIVED.

Medico-Legal Relations of the X-Rays. Report of the Committee of the American Surgical Association. J. William White, M. D. Philadelphia.

Intercapulo-Theracic Amputation. Ibid.

Neurasthenia: Some Points in Its Pathology and Treatment. G. W. McCaskey, M. D. Fort Wayne, Ind.

Case of Tumor of the Cerebellum, with Drainage of Fluid Through the Nose. Ibid.

Educational and Legislative Control of Tuberculosis. Chas. Denison, M. D. Denver, Col.

The Preparation of Tuberculin, Its Value as a Diagnostic Agent. V. A. Moore, M. D. Ithaca, N. Y.

Pachymeningitis. John T. Scott, M. D. Indianapolis, Ind.

Pelvic Pain in Women from Impacted Urethral Calculi. Septimus Sunderland, M. D. London: John Bale, Sons & Danielsson, Oxford Street, W.

Results of Modern Aseptic Surgical Technique. Hunter Robb, M. D. Cleveland, O.

Normal Position of the Uterus in the Pelvis in Relation to Its Physiological Mobility. Ibid.

Ligatures and Suturism in Abdominal Surgery. Ibid.

Submucous Myoma. Ibid.

Genital Tuberculosis. Report of Two Cases. Ibid.

Establishment of the First Free Municipal Bath House at Buffalo, N. Y. Ernest Wende, M. D. Buffalo, N. Y.

THE SANITARIAN.

OCTOBER, 1900.

NUMBER 371.

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

PARIS, AUGUST 10-17, 1900.—ABSTRACT OF PROCEEDINGS.*

The Ecole de Medicine in Paris, which during the first days of August had been the scene of the labors of the International Medical Congress, witnessed a second great gathering of scientists, commencing on Friday, the 10th inst. The second congress at the Ecole de Medicine was the tenth International Congress of Hygiene and Demography, which has met triennially since 1869 in Paris, Rome, Berlin, London, Buda-Pesth and other towns, the last being held, three years ago, at Madrid. On that occasion the invitation of Belgium to assemble at Brussels in 1900 was accepted, but the occurrence of the great Exhibition of this year in Paris compelled a change of plan, and, Belgium waiving its claim, Paris was naturally selected. Before the inaugural meeting on August 10th nearly 2,000 delegates from the leading cities and learned societies of the world had sent in their adhesions, and to welcome all these the leading professors of medical, sanitary, architectural and engineering science in France assembled in the grand amphitheatre of the Paris Medical School, under the presidency of Dr. Brouardel, and were cordially welcomed by him in the absence of the President of the Council of Ministers, M. Waldeck-Rousseau, chief honorary president. Among the honorary presidents who joined in the welcome to the visitors were the president of the Paris Municipal Council, the president of the General Council of the Seine, the Prefect of the Seine, Dr. Bergeron, Prof. Emile Trélat, Prof. Corfield (vice-president of the Sanitary Institute of Great Britain), Dr. Bergeron, and the leading members of the medical faculty, M. Bechmann, Chief Engineer of roads

*From the Report of The Surveyor, August 24, and August 22, 1900.

and bridges, etc. Two meetings of the congress were held on the opening day, the earlier in the morning, when the general secretary, Dr. T. A. Martin, announced the final changes made in the programme, and the latter later in the afternoon, when the delegates were cordially welcomed by Prof. Brouardel at the inaugural meeting of the congress. A grand state reception was also given at the Elysée by the President of the Republic and Madame Loubet to delegates at this and other congresses that are being simultaneously held, the Shah of Persia, his suite, and numerous other personages, being among the guests, who numbered many thousands.

The first sittings of the sections, which numbered eight besides that of demography, began on Saturday, August 11th, the most assiduously attended of them being the first, devoted to the microbology of hygiene, and the third, devoted to questions of salubrity and the sciences of the sanitary engineer and architect as applied to hygiene. In other sections cremation, sanitary legislation, international regulations for transport by sea and land, smoke abatement, unsanitary houses, military, naval and colonial sanitation, were discussed. M. Bechmann was appointed president of the third section, and M. Felix Launay, chief engineer of the Paris Sanitation Commission, was appointed secretary.

PROTECTION OF THE WATER SUPPLIES.

The first paper, read and prepared by M. Launay, was a rather lengthy one, on the subject of "The Protection and Purification of the Sources of Water Supply and Rivers," which led to a long and interesting discussion.

Adopting as a text a declaration of Dr. Brouardel, "our eminent president and one of the masters of the science of health," as M. Launay described him, the sanitary engineer of Paris set forth the points to be considered, in a long paper. Legislation for the protection of sources of water supply was seriously studied in England from 1866 to 1876, the Rivers Pollution Prevention Act of the latter year, which prescribed heavy fines for infractions of the Act, being the outcome of that study. In France the question was much less advanced, the towns which had taken up the question of the purification of sewage being extremely few. M. Launay declared his opinion that the cases were very rare in which the used water of factories or the contents of sewers could be tolerated. With regard to methods of sewage treatment, M.

Launay declared his preference for irrigation systems where local circumstances permitted, but the biological systems of Messrs. Dibdin and of Cameron, Martin & Co., which appeared to have given good results in England, might be substituted, with the notable advantage that they avoided the difficulty of accumulation of sludge. The filtration system of M. Puech also offered advantages in the economy of expense and of space which it realized. Other methods of treatment were passed briefly under review.

With regard to the question of protection of sources of supply, he said it was not sufficient to have captured pure water; means must be found to keep up its purity. Legislation for the purpose of protecting sources of supply could not be too much insisted upon. The protection given should include as extensive an area round the head of supply as possible, and a sufficiently large protected zone should be regarded as a *sine qua non* by municipalities. The conclusion of a commission appointed to study this matter had demanded that a body of analyses and bacteriological reports of such sources, the State to bear all preliminary charges, and a bill would be submitted to the Chambers shortly to accomplish this purpose. Article 5 of the proposed bill runs: "When during three consecutive years the deaths in a commune exceed 22 per 1,000, the fact must be called to the attention of the administration of the department by the communal authorities, and the former shall institute an inquiry into the sanitary conditions of the commune." Some experts go so far as to declare that it is impossible to reach perfection in providing great towns with a perfect source of supply by the ordinary methods, and this desideratum will only be certainly attained when water for drinking purposes is manufactured artificially or is purified by chemical processes. It is in this direction that the sterilization in bulk of water for alimentary purposes has been suggested, either by utilizing the oxydizing properties of ozone or of peroxide. But it would under such systems have to be first settled whether they would do well to destroy only the pathogenic microbes, and whether it would not be useful to leave inoffensive microbes. It would also be desirable first to ascertain whether water so sterilized would retain all the qualities desired in pure water as to taste, color and odor. Would it not be better to endeavor to procure the purest possible source of natural supply, and then to protect from every kind of contamination? As it had not been proved that sources of supply could not thus be effectively protected, the writer of the paper could not propose to adopt gen-

erally the principle of sterilization—a principle which ought to be employed only for exceptional cases when no other means of providing pure water were available. In summarizing the paper at its conclusion, M. Launay suggested that the congress should adopt a resolution, to be forwarded to the authorities, tending to procure the passing of the proposed bills by Parliament, with a double object—(a) the purification of rivers, the sanitation of towns by treatment of sewage and the utilization of the contents of sewers; (b) the supply of towns and rural districts with water for drinking purposes. The resolution proposed was thus formulated. The congress expressed the desire that the government should promulgate and effectively apply legislative measures (1) for the protection of streams against the refuse water of towns and factories; (2) for the defence and preservation of the purity of waters utilized for the supply of towns. Thus formulated, the propositions were discussed at a combined meeting of Sections I and III, held on Thursday, August 16th.

Dr. CALMETTE maintained that in certain localities, in calcareous soils particularly, the original purity of water could not be maintained, and in such cases impurities must of necessity be imported into it before it arrived at the point of delivery to the consumer, and if water not absolutely pure was delivered the water supply should be considered defective. Water when delivered ought to be absolutely pure, and he suggested an addition to the resolution of a clause calling for the additional guarantee of purity obtainable by the sterilization of the water either by ozone or other known process, the ozone process being the best. The sterilization should be effected at the point where the water was delivered for town consumption.

M. BECHMANN said they would lose themselves in details if in the course of a long paper such as M. Launay had given them they were to discuss it paragraph by paragraph. Sterilization processes were still under trial, and before they proposed that government should legislate on particular lines—in adopting the principle of sterilization, for example—they ought to have further experiments and proofs of its efficiency and economy.

Dr. GARTNER, speaking in German, said the principle of sterilization might be adopted in great cities like Paris, but in rural districts and among sparse populations this was impracticable.

Some other German and French delegates supported the views of Dr. Calmette, whose remarks had been received with considerable applause After considerable discussion,

M. LAUNAY, in replying, said that one of his principal objects had been to provoke discussion, and the useful discussion they had had proved that he had succeeded in his object.

Eventually the resolution as formulated was adopted, with the addition of a clause stating that "if the water supply was suspected, or the water was contaminable, it ought to be sterilized."

HOUSE DRAINAGE.

The most important subject discussed at the second meeting of the third section was "The Sanitation of the Interiors of Houses Connected with the Public Sewer." The discussion was based upon a report, made at the instance of the organizing committee of the congress by M. Lacau, architect (vice-president of the Society of Sanitary Engineers and Architects), and M. Louis Masson (engineer-inspector of the sanitation works of Paris), who worked in collaboration, and a report made by Mr. Alfred Roechling (sanitary engineer and expert), of Leicester. All sanitarians, said the French report, now agree that pure air, pure water, and free and abundant light, are the three great essential factors indispensable to the salubrity of a house. It follows that one of the principal objects of the sanitary engineer must be to supply to dwelling-houses pure water and salubrious air. It is the object of those concerned in the sanitation of towns, which forms the programme of the section, to ascertain the conditions to be fulfilled in order to realize this great desideratum. And, admitting that a satisfactory solution may have been found for the problem, it still remains to be found out whether the pure supply at first obtained does not run the risk of being rendered again polluted by impure contacts. Water is less easily vitiated than air, because of the conduits in which it is carried under pressure, and it is the more numerous causes of the vitiation of the air which render it the more difficult to avoid. The vitiation produced by the respiration of animals and men demands a constant renewal of the air, and it must not only be continually renewed, but, as far as possible, it must be protected from the contamination of what doctors have called "the waste products of human life." Putting aside the supply of water from wells, the supply to towns by pipes under pressure is that which is mainly considered, and the question of water supply becomes complicated by questions of good materials, proper forms, good junctions and good plumbing, which are all essential to a proper distribution of water to the house. With regard to the supply of

pure air, which means good ventilation, sanitarians are to-day agreed that the products of respiration tend to pollute the ambient atmosphere, and that in a confined space, which is inhabited, the atmosphere is continually altering and may end by becoming irrespirable if there is no ventilation. The situation is not improved by the presence of stoves and lighting, which themselves consume oxygen and give off irrespirable gases. Hence the renewal of the air in the dwelling-house is an absolute necessity. Natural ventilation takes place through the porosity which all building materials possess in a greater or less degree, and this natural ventilation is constantly going on unless the walls of the house are covered with an impermeable layer of paint or other material. Ventilation by the chimney is ordinarily more or less constant, but is an evil when the occupant burns on one side and freezes on the other. These natural means may suffice for small spaces and under favorable conditions, but large spaces necessarily require artificial ventilation for their regular and sanitary working. These elementary principles of ventilation have been treated and developed in other congresses by the late Sir Douglas Galton, and M. Emile Trelat made some very interesting communications on the subject to the congress in Paris of 1889, and that at Buda-Pesth in 1894, and it is much to be desired that the theories they put forward may become public property before long, and receive general application in dwelling-houses which still remain in great measure deprived of them.

With regard to the removal of the waste products of human life, this must be done as rapidly as possible, and there are two principal new methods of doing this. The first, in which circular vertical vessels are usually employed, has the disadvantage of leaving traces of soiling which are not easily removed and are liable to become sources of insanitary emanations. The second plan, which is to be most recommended wherever practicable, consists in burning the waste products on the spot as they are produced. To effect this it is merely necessary to have in the house kitchen a furnace of special design to permit of the cremation of the refuse without smell or emanations.

These main principles being settled, the arrangements to be made for carrying them out practically were considered; and as to these, there is, says the report, a general agreement between the most advanced sanitarians of different countries, with one or two remarkable exceptions. A complete divergence of views is shown in the

paper between the authors of the report and a majority of British sanitarians upon the question of the desirability or otherwise of the disconnecting trap. The authors declare themselves frankly the enemies of the disconnecting trap. They regard the connection of the domestic system of pipes and drains directly with the public sewer as preferable to the disconnecting system. They aver that the disconnecting system has developed in England in consequence of the defective state of the public sewers, to which were formerly directly connected the system of waste pipes and drains throughout the dwelling. The English had often constructed rectangular sewers, which were the depositories of filth, where masses of corruption gave rise to the development of considerable masses of gas. It was not astonishing that these pestiferous gases should penetrate into the houses and become a serious nuisance, and it was not unnatural that they should seek to rectify the evil by the invention of the intercepting trap. The reporters admit that if the air of the sewer be considered as the immediate vehicle of infectious germs, the interception system might be considered the best, but it has been recognized that this theory of the diffusion of infectious diseases, such as cholera, typhoid and diphtheria, by sewer gas is incompatible with our present knowledge of the principles of the propagation of diseases. The employment of the trap leads to the stagnation of the water and the fæcal matters, and it has been calculated that a trap of 6 inches diameter contains 10 litres of water, the velocity of which does not exceed 4 inches per second, and that therefore there can be no vigorous flush. In consequence, the solids brought down by the water remain in the trap, where they are liable to putrefy and occasion putrid emanations in the conduits. This is why, as the result of experiments made by the Sanitary Institute, from 20 per cent. to 60 per cent. of the fæcal matters from a water-closet remained in the trap, and that only the balance escaped to the sewer. Hence with the trap system the rapid evacuation of all the waste water and the waste organic mathter is not effected while fresh and before fermentation has set in. Instead of from 1 per cent. to 14 per cent. of solid matters remaining in conduits of 6 inches in diameter, the proportion remaining in the disconnecting trap varies from 20 per cent. to 60 per cent., the average being from 26 per cent. to 35 per cent., and the quantity of water necessary to flush them, instead of being 9 litres, rises to 14 litres, and even 15 litres, for each evacuation. Thus, necessarily, an augmentation in the quantity of water to be supplied to towns is implied.

The report concludes, therefore, that the disconnecting trap must be prescribed, and the reporters add to the report, as their own conclusions, eight resolutions relating to house sanitation adopted by the Society of Sanitary Engineers and Architects of France, which had always guided them throughout this inquiry. The chief of these conclusions are: (1) The salubrity of the house depends not only upon the ventilation and the lighting of the rooms, but also on the situation and the cleanliness of the water-closets. A single closet badly fitted or badly kept is sufficient to infect the whole house. (2) The rooms composing a dwelling ought to be ventilated. The occupants ought to breathe pure air, drawn directly from the exterior and admitted by the most diverse means of access, without causing any injury to the occupants. (3) It is desirable that household refuse should be burnt as soon as it is produced, and, failing that, vessels intended to contain it ought to be impermeable, air-tight and closed. They should be cleansed and disinfected as frequently as possible. (4) Water-closets should be supplied either by reservoirs or some other apparatus jointed to the system of water pipes, and the volume of the flushes ought to be sufficient to wash the basin and to carry all the matters to the public sewer, while leaving the basin sufficiently supplied with water. It is desirable to place below the basin a trap (*siphon obturateur*) which will have the effect of intercepting all communication between the impure atmosphere of down pipes and the air of the dwelling, and to prevent as far as possible the deposit of extraneous matters which may obstruct the flow. (5) The sanitation of a house requires the immediate discharge, and without stagnation, of all waste towards the public drain provided to receive it. (6) The drainage of a house requires fall pipes, down pipes for rain water and domestic slops, and the drain that connects them with the public sewer. This drain, laid with the greatest fall available, is directly connected with the public sewer without the intervention of a trap. The rain pipes and down pipes are prolonged above the roof, to ensure the ventilation of the whole system. (7) The plumbing work, not only for the water supply, but also for the discharge of fæcal matter and waste water from the interior of the dwelling, ought to be the object of particular care. The distribution should be such that the whole system of pipes, joints, branches, reservoirs, flushing apparatus, down pipes and waste pipes may be completely protected from frost.

A long and animated discussion followed, in which Mons. Symons (engineer), delegate from Holland, Mr. Alfred Roechling

(engineer), English delegate, Mr. Adolphe Smith (London) and other speakers took part.

Mr. ROECHLING said it had been stated in the paper that the sewers in England were foul and poorly constructed, a good deal of gas forming in them in consequence of their defects. He maintained that this was not so, and took a strong objection to the statement. There were a few cases, especially in the older portions of London, where the sewers were not so good as they might wish to see them, but where they were newer they were more scientifically carried out. As a rule the sewers of England were as good as they could be made, and were managed as efficiently as in other countries, if not better. It had been stated in the paper that in experiments made by the Sanitary Institute as much as 50 per cent. of foul matters had remained in the disconnecting trap, but it had not been stated that these experiments were connected with a water-closet which was equivalent to a water-closet placed in a cellar If we in England had houses of five or six stories high, as they had in Paris, inhabited by from sixty to 100 people, each person being supplied with sixty gallons of water per day, the flush obtained would have been more than sufficient to clear away all deposits from the trap. It was clear that if in the actual circumstances under which these experiments were made only 50 per cent. of deposit remained in the trap, nothing at all would have remained in it in ordinary circumstances. The experiments referred to might with greater justice be cited as an argument in favor of the adoption of the disconnecting trap as in England.

Mr. ADOLPHE SMITH continued the discussion. He pointed out the danger of the penetration of sewer air into a house where the ventilation pipe was connected directly to the sewer, unless the joints were perfect and the ventilation was carried well above the roof. At Maidstone, during the late epidemic of typhoid, a case was cited where the outlet of a ventilating pipe connected with the sewer came out opposite the windows of the lowest of three villas built on an incline. The owner protested against the nuisance, and the pipe was carried higher up. The outlet was now opposite the windows of the second villa, whose owner also protested, and got it further lengthened. It was then a danger to the third villa, the owner of which made no complaint, but caught the fever. The breathing of impure air, particularly when asleep, if not the direct means of propagating disease, lowered the vitality, and rendered persons in contact with it more liable to the attacks of disease.

The intercepting trap commonly employed in England was not quite the same thing as the trap known in France as the syphon terminus or *siphon de pied.*

MR. ROECHLING'S REPORT.

Mr. Alfred Roechling was then called upon to read his report on "House Drainage in Relation to the Public Sewer," which had been translated and printed by the committee of organization. The author read, in French, certain portions of the report, which were well received. He finished by reading the conclusions given below:

(1) The end and object of the systematic drainage of a house is to endow it with a good system of water supply and discharge for waste water.

(2) The object will be the most certainly attained where the following essential rules are strictly observed: (a) To exclude from the interior of our houses all sewer gas, to avoid pollution of the soil by fæcal matter or waste water, to prevent the generation of deleterious gases in the soil and in the air below and around our houses; (b) to discharge as rapidly and completely as possible into the public sewer all fæcal matter and waste water produced.

(3) The application of these two essential rules necessitates (a) an intercepting trap; (b) a disconnecting trap for the exclusion of gas; (c) a trap for the interception of solid matters other than those from the water-closet; (d) a proper system of ventilation; (e) a flushing tank for each water-closet; (f) pipes that are airtight and watertight; (g) the employment of proper materials for the pipes; (h) proper dimensions and thicknesses for all pipes; (i) sufficient fall to ensure automatic cleansing; (k) junctions with very obtuse angles; (l) proper construction of water-closets, baths and other sanitary appliances; (m) facility of access to all pipes for inspection and testing; (n) sufficient flush for all closets and baths; (o) periodical visitation and cleansing when necessary. After a very brief consideration of the conclusions the section passed to the order of the day.

The afternoon was spent in a visit to the sewers of Paris, and in the evening all the members of the congress received invitations to attend the reception given by M. Waldeck Rousseau, the Minister of the Interior and President of the Council, at the Ministry, Place Beauvau. The reception was numerously attended, and was very brilliant.

SMOKE PREVENTION largely occupied the third sitting of the section, the discussion being introduced by a lengthy report which M. Armand Gauthier and Prof. Gréhant had been authorized by the committee of organization to make, but two other reports—one by Prof. Emile Trélat on "The Principles Imposed by Hygiene on the Street Regulations of Towns," and one by M. Pucey on "The Hygienic Principles to be Observed in the Construction, Ventilation and Decoration of Houses."

VITIATION OF THE ATMOSPHERE OF TOWNS.

The masterly report of the two famous experts, M. Armand Gauthier and Prof. Gréhant, was read by the secretary, M. Felix Launay, in the absence of the authors—the former from illness and the latter from the pressure of professional calls. The hygiene of great cities—Rome, London, Paris, Berlin, St. Petersburg—never fails to interest the municipalities, experts, and the citizens themselves. Whether it is a question of the salubrity of the streets, the sanitation of the soil and subsoil, the atmosphere, the water for domestic use, the causes of epidemics, the evils entailed by certain industries, all these are great questions which have justly occupied the attention of all minds. Paris, in particular, by the beauty of its site and its monuments, the mildness of its climate and its life out of doors, deserves to have preserved, as far as possible, the purity and transparency of its atmosphere, the salubrity of its air, and the cleanliness of its streets and buildings, which make of it one of the finest cities in the world, all tending to make life there easy and pleasant for foreigners as well as natives.

Paris within the walls covers 8,000 hectares and consumes annually 3,000,000 tons of mineral combustibles, or 1 ton per day for each hectare, which corresponds to 100 grammes (about 3 oz.) per square metre of the city, every twenty-four hours. These 100 grammes of mineral carbon contain about 74 grammes of real carbon, which when entirely consumed would give 216 grammes, or 125 litres, of carbonic acid. This, when diluted with the enormous quantity of pure aid due to the 4,000 metres of the height of the atmosphere, does not seem very seriously deleterious. Combined with the tables compiled by Prof. Chandler Roberts' committee on the smoke-consuming capacity of apparatus exhibited at the South Kensington Exhibition of 1882, it has been found possible to get an idea of the best modes of heating, and to calculate very nearly the weight of the solid particles contained in the smoke that falls upon Paris annually.

M. Armand Gauthier took samples of the air of Paris from the street within a few yards of the congress room in glass and zinc tubes, at different seasons of the year, in fine weather, very fine weather, in rainy and in variable weather, and analyzed them. He compared the analysis with others of air taken in forests, in open Atlantic and from high mountains, which were found to be almost pure hydrogen and pure carbon, with mere traces of the hydrocarbures found in the air of Paris in considerable quantity. Other scientists had already determined the quantity of carbonic acid found in the air of Paris, and to these were added some important results of observations made at Cleator Moor, near Whitehaven, where the inhabitants of a row of cottages were in 1857 struck with vertigo, loss of feeling, paralysis, weakness, and other symptoms of gas poisoning, the gas having been carried by the wind from high factory chimneys one mile or two miles distant. From such data the causes of general insalubrity had been ascertained, but it remained to examine the causes of special local insalubrity, due to certain industries and certain chemical agents.

By experimenting with dogs and other animals, Prof. Gréhant had ascertained the law of the absorption of oxy-carbonic gas by the blood. It had been found possible to obtain from the blood of animals that had breathed air containing 1-50000 and 1-100000 of oxide of carbon, traces of the gas that could be measured in the professor's grisoumétre (fire-damp measurer). Proceeding in the same scientific manner, the production of oxide of carbon from fuel of various kinds burnt in different kinds of apparatus was ascertained. From these data the report concludes that there is danger to health in certain modes of consuming fuel and in certain forms of fuel. Prof. Gréhant found that the smoke of wood burned in a brazier contained at least 1-500 of carbon, and he also finds the burning of briquettes (coal blocks), which is extending more and more, injurious to health under certain circumstances, and the report concludes that the burning of such blocks in a closed room in open chauferettes ought to be prohibited. After a dog had been exposed to the atmosphere of a room containing a metal stove made red-hot, the respiration and the action of the heart stopped. From this two conclusions are drawn—(1) the heating of rooms by metal stoves which can be made red-hot ought to be discontinued; (2) the metal should be covered exteriorly with porcelain or other pottery. The report concludes as under: The facts analyzed in the report show that the vitiation of the atmosphere, even

when smoke is emitted in enormous volumes, is less redoubtable than might have been expected *a priori,* but numerous local causes may in certain houses and certain quarters, in the vicinity of great factories, in densely-populated districts, in closed places, badly ventilated and irregularly heated, cause temporary accumulations of gas which may be dangerous to health. The question of the causes of miasmatic insalubrity or of the propagation of epidemics was not within the limits of the inquiry, but the report declares that the industrial and domestic causes analyzed render persons more susceptible to disease in vitiating the air and in filling the atmosphere of towns with smoke which stops the actinic action so beneficial and microbicide—of light. In taking away the transparency of the air, smoke contributes also to destroy the elegant and artistic aspect of towns, which contributes materially to the general contentment of their inhabitants, and consequently to their health.

M. SYMONS (engineer), Dutch delegate, said the question of smoke prevention had been thoroughly considered by the English engineers for many years, and the repressive measures adopted in that country might with advantage be extended to other countries. It was found that with properly-designed and properly-constructed furnaces, and with careful stoking, the nuisance of thick black smoke in long-continued emissions was perfectly preventible It was a mere question of perfect or imperfect combustion and proper management. When the process of combustion was perfect there could be no smoke. When there were emissions of thick, black smoke, combustion was imperfect and costly.

Mr. A. SMITH (London) said it was where smoke produced fog that it became so injurious to health. The air of Paris was formerly much purer than at present, owing to the diminution in the consumption of wood as fuel and the increased consumption of coal. This was a serious menace to Paris, and if the use of coal continued to increase the atmosphere of Paris would no longer be famous for its purity and transparency. Its atmosphere would become as polluted as that of London, perhaps. In London it was not so much the smoke produced that was injurious as the fog produced by smoke. When combustion was perfect over 4,000 caloric units were given off per kilogramme of carbon instead of about 1,700 caloric units, which was the average. Combustion might be too perfect. There was a stove invented by a German, in which the combustion was so perfect that there was no smoke.

It not only consumed all its own smoke, but in a fortnight it had consumed itself. The intense heat due to perfect combustion had destroyed it.

Dr. ZAHOR (Prague) referred with approbation to the legislative measures adopted in England against manufacturers who did not consume their own smoke, and read a communication detailing the measures adopted in Austria to overcome the inconvenience caused by smoke in manufacturing centres and in health resorts. The discussion was continued by M. Vaillant, M. Lacan and Dr. Berthod, who all had conclusions to propose. The further consideration of the subject was then adjourned. At the resumption, the conclusions of the report were adopted, and after some discussion a clause was added to the effect that measures of repression were, above all, necessary in the industrial quarters of densely-populated towns.

REGULATIONS FOR THE STREETS OF TOWNS.

M. EMILE TRELAT opened a discussion on this subject by reading extracts from his report upon the subject which had been printed and circulated among the members of the section. The necessity of easy and facile relations between the members of a community had created towns, and the exigencies of civilization tended to the continual increase of them. In all times municipal authorities had endeavored to restrict the liberty of constructing by fixing the width of streets and limiting the heights of houses. A town would enjoy the maximum of salubrity where the following things were assured: (1) A sufficient and good supply of water for drinking purposes, and a complete system of cleansing; (2) the admission of air, light and sun upon every floor which was inhabited.

As regards air, the professor said, the man that shuts himself up vitiates the air around him. If two persons occupy the same room the evil increases, and so on, according to the number of occupants. Two houses which adjoin further complicate the evil, and matters become critical for the health when a house rises in successive stories. The principle of salubrity, so far as the supply of fresh air is concerned, is to increase to the maximum the spaces unoccupied.

With respect to lighting, he said, when towns increase freely and the inhabitants build without restraint, the tendency is to increase the height of the houses and the number of stories, and eventually

only the upper stories get direct light, the lower ones being contented with reflected light from the opposite walls. There insalubrity establishes itself for want of light.

As regards sun, Adolphe Vogt asked what should be the relative dimensions of streets and houses in the latitudes of Paris and Vienna, the problem depending on (1) the latitude, (2) the angle of incidence of the solar rays on the shortest day in the year, (3) the angle that the direction of the street makes with the meridian. The solution showed that a street in the direction of the meridian should have a width of two and one-third times the height of the houses, and streets at right angles to that direction should have a width four times the height of the houses. The general principle deduced in the report was: "That all street regulations ought to tend towards widening the streets to the maximum and reducing the height of the houses." The section, after a very brief discussion, adopted a resolution in the above terms.

HYGIENIC DWELLING-HOUSES IN TOWNS.

The report of M. Pucey admits that there are architects—men worthy of the name—who follow every development of progress in their art and try to apply them, but, in general, the study of hygiene was but little followed by the majority of constructors. Except in the Central School of Architecture the schools ignore the subject, and it may be said that the teaching of hygiene as applied to the sciences of the engineer and architect does not exist in France.

The report is almost exhaustive, the general principles governing the application of the science of sanitary construction to country houses and their dependencies, the houses of the peasantry, being treated of and conclusions drawn in each case before the principles applicable to the construction, ventilation and decoration of the town dwelling-house are touched upon.

One of the chief obstacles to the salubrity of dwelling-houses in large towns is that so many houses are merely collective habitations in which dwellings are more and more huddled together and the floors made as numerous as possible. It follows that air and light are let in less and less liberally, and dirt is reproduced in greater and greater quantity. In order to attain sufficient air and light either the streets must be made wider or the houses be made less high. M. Emile Trélat has said that "in all cases where the height of the houses is more than two-thirds of the width of the

street a portion only of the rooms will be properly lighted, and the lower stories, getting only reflected light, will be miserable and unhealthy dwellings."

The principal conclusions of the report, which are the result of studies and discussion by a committee of architects and engineers, including MM. Tanquerel, Vaillant, Gorot, Dechard, Lacau, Dupuy, Pergod, Forgeot and the author (M. Pucey), are as under:

Wherever possible, the house or wings of the house should be so placed as to get the greatest amount of sun. All rooms ought to be accessible to sunlight, or the light of the sky received at an angle of not more than 45°. All rooms should be in size proportionate to the service required of them, and never less than 30 to 40 cubic metres in capacity. Each room must be well ventilated, and lighted through its whole depth; as far as possible they should be separated from one another by dressing rooms, *cabinets de toilette,* etc. In each dressing-room there should be a supply of drinking water and a waste pipe for waste water. All bedrooms must, as far as possible, be placed in the most sunny side of the house; the bedrooms must be as large as possible with reference to the site and the number of persons to occupy them, and should be, if possible, limited to two occupants. Gas should not be laid on in bedrooms. Light and air should be admitted by openings proportioned to the cubic capacity of the room. In narrow streets the height of the first floor should be more elevated in proportion to the number of higher houses on the opposite side of the street. Each room should have a chimney communicating with the outer air. The chimneys should by preference face the openings of doors or windows. Every room intended for permanent occupation should possess a ventilator in the ceiling. The water-closets, whatever system be adopted, should be as far as possible from the living rooms—they should be not less than two square metres in superficial area. Wherever possible a cistern, with syphon flush, should be provided therein. The apparatus should be in porcelain, pottery or stoneware, with hermetic seal, movable or detachable seats, giving easy access to the apparatus; the walls of water-closets should be painted, varnished, or formed of pottery, so as to be easily washed. The number of water-closets should be such as to provide one for every six persons; the bath-rooms and linen-closets should be in close proximity to the bedrooms; the kitchens should be placed as far as possible from the living rooms, and be isolated by the interposition of some office or other small room; the action

of the ventilators should be so combined as to ensure the passage of air from the bedrooms to the dependencies, and never in the contrary direction.

The conclusions were generally approved, but no division was taken upon them. The section then adjourned.

DISPOSAL OF REFUSE.

One of the subjects most seriously discussed in Section III. was the collection, removal, and final treatment of street and house refuse, a subject which also occupied corresponding sections in former congresses, particularly that of Buda-Pesth (1894) and that of Madrid (1897), at which an international committee was appointed to continue the study of the question, with M. Weyl, of Berlin, as secretary. The committee of organization of the tenth congress of hygiene desired an independent report, and put the matter in the hands of M. Hudelo, sanitary engineer, of Paris, whose report formed the basis of the discussion of the subject by the section, supplemented by a report from M. Weyl, the secretary of the International Committee.

The varied circumstances in which refuse matters are produced in houses and towns, according to situation and season, and the possibility of their utilization for agricultural purposes, have complicated this problem, said the reporter, to such an extent that innumerable discussions have been evoked by it at health conferences and congresses in every country, and numerous methods of solving the problem applicable to all cases has yet to be found. With regard to house refuse, the system adopted in Paris is practically the "pail system," but the receptacle used is larger. It consists of a portable cylinder of galvanized iron (with cover) placed in the court or yard, which, after receiving the refuse matters of the day made in each house, is placed at a certain hour every night on the footway or the street, to be picked up and emptied for removal in dust-carts to a refuse depot. In Paris the trade of the *chiffonier* is too well established and too useful to be suppressed, and the report finds no reason for suppressing that trade. The *chiffonier* might therefore be allowed to go through the refuse before it is carted off, or might even be authorized to spread it out on tin-plates for the purpose, provided that the refuse was properly replaced, and that it can be done without causing a nuisance.

With regard to street refuse, which may be as much a nuisance as house refuse, it must also be removed as quickly as possible.

In Paris the streets are swept early in the morning and the accumulations are carted away before street traffic becomes active, and discharged either directly to the sewer or to the refuse depot. The streets are sprinkled with water before being swept in order to prevent the rising of dust into the atmosphere. The report recommends that the vehicles employed as dust carts should be of metal, or should carry cases of metal, air and water tight, which should be cleaned and washed every time they are used, and that the load should never rise higher than the upper edge of the cart. A scheme has recently been proposed to utilize the tramways of Paris, which have now become very numerous, for the removal of street refuse during the night, to points in the suburbs at an average distance of five miles from the city. The report recommends that the refuse be carried out to much greater distances (from sixty miles to 120 miles), where agricultural depots might be formed where farmers might obtain it for manurial purposes. In order to lighten the cost of transport, useless matters might be separated, the *chiffonier* might go through it, and the remainder might be condensed into a small space for loading up. These depots would be at least 100 yards from any dwelling house. An experiment in the treatment of two central arrondissements, out of the twenty into which Paris is divided, has succeeded so well at St. Ouen-les-Docks (north of Paris) that it is proposed to extend it to one-half of Paris (ten central arrondissements) from next year. At these works 300 tons of refuse per day are treated. It is discharged from tumbrils into a trench at the bottom of which runs two endless bands, on which the stuff is slowly carried to a central elevator. During its passage, the refuse is rid of solid matters useless for the agriculturist, and of other matters, by gangs of workmen. When the *chiffoniers* have gone through this, the remnant is burnt. In the meantime, the stuff not cast out is carried up the elevator to hoppers, through which it drops into railway wagons running on a branch line of the Chemin de Fer du Nord, to various points on which the wagons find their way next morning. An engine of 70 horse-power is employed at the works. The report states that in and around the works there is a total absence of bad odor and no traces of decomposition, and that the health of the two sets of workmen is as perfect as possible. The cost of treatment is 35 centimes (just over 3d.) per ton of refuse. This is the solution of the problem toward which Paris is tending.

Other methods adopted in England, America and various Euro-

pean countries are described in the report. They are cremation methods, distillation methods and desiccation methods. Refuse in England is generally combustible, and this is the case at Paris, Hamburg, and some other towns; but at Copenhagen 25 per cent., and in Berlin 10 per cent., of coal or coke must be added. The refuse of Hamburg would burn in the furnaces of Berlin or Copenhagen, but not *vice versa.* Destructors of the Fryer, Horsfall and Warner types, used in England, and of Whyley in the United States of America, were described, as well as a new one by M. Lauriot, tried in Paris in 1895, which proved that Paris refuse was self-consuming. M. Lauriot estimates the heat-producing capacity of Paris refuse at 30 kilowatts per ton per hour, against 60 kilowatts in England. The 650,000 tons of refuse produced by Paris every day he estimates to produce a force of 2,017 horse-power.

The report concludes with a description of three processes which have much in common—that of Arnold, employed in New York and Brooklyn; that of Leblanc, tried recently on an experimental scale in France and that of Merz, which was in reality introduced nearly half a century ago at Aubervilliers, near Paris, for a totally different purpose. In these systems the problem is to extract from the refuse all its grease and to dry the remainder, so as to constitute an artificial guano. These are desiccation methods. The formal conclusions of the report were: (a) When agricultural conditions permit town and house refuse may be directly employed for agricultural purposes, on condition of being rapidly collected and disposed of; and (b) when the conditions do not permit of this, either cremation or desiccation processes may be employed, the choice being governed by the nature of the refuse and the price at which the artificial manure remaining in the latter methods can be sold.

The report of Dr. Weyl was read before the discussion was taken. This was a simple *résumé* of the principles that govern the maintenance of "healthy streets." The following were the leading principles formulated by Dr. Weyl: (1) The collection and removal of refuse ought to be undertaken by the municipality. (2) Vessels for the reception of house refuse should be interchangeable, capable of being closed, and should be so arranged as to be easily filled without creating dust. A satisfactory type of receptacle in the form of sacks which could be easily collected and which possess sufficient resistance has not yet been found. That system would be perfect, for it would diminish the dead weight. (3) The substitution of interchangeable receptacles ought to be

made at regular intervals, at least once every week. (4) No *chiffonage* should be permitted, either in the houses or in the streets. (5) The removal should be completed by 9 a. m. in summer and 10 a. m. in winter in frequented places. (6) The disposal should be by employment of the refuse for agricultural purposes where economically possible; cremation and fusion should only be resorted to when the former method is impracticable or when the refuse is contaminated, as in the case of refuse from hospitals. Middens (*depotoirs*) are dangerous to public health, and ought to be prohibited.

The section, after some discussion, resolved that before definite decisions could be advantageously come to with regard to the collection, removal and treatment of house and town refuse, further information should be obtained, and that it was desirable that the International Committee, nominated at Madrid, should be reappointed and be requested to continue to make inquiries as to methods adopted in different countries for these purposes, and to prepare a report for the next congress.

The following gentlemen were appointed to represent the various countries: France, M. Lauriot; England, Mr. Roechling; Germany, Dr. Weyl (secretary), Herr Andreas Meyer (President of the Committee); Holland, Mynheer Van der Perk (Rotterdam); Switzerland, M. Schmidt; Sweden, M. Almaquest; Norway, M. Holst; Hungary, M. Karkass (Buda-Pesth); Austria, M. Rella, (Vienna); Russia, M. Kontkowski, St. Petersburg; Dr. Pollak, Warsaw; Italy, Signor Pagliani; and United States, Mr. Rudolf Hering, New York. On the last day of the congress this committee held their first meeting in the interval between the last sitting of Section III., and the final closing meeting of the congress. A programme was formulated, according to which each member of the committee will communicate to his colleagues through the secretary such information as he may think useful upon the questions of the collection, removal and disposal of house and street refuse in towns, with a view to preparing reports on the subject to the congress at Brussels in 1903.

CREMATION.

Some of the subjects that came before Section III. were confided to a sub-section sitting separately, the most interesting report coming before it being one on "Cremation," by M. Georges Salomon.

In nearly all the leading countries of Europe cremation has been permitted in recent years, and in most of them encouraged, at least by sanitary reformers; but in a few States, Austria-Hungary and Holland, for example, this mode of sepulture still remains interdicted. The report suggests that the congress should pass a resolution in favor of legislation to abrogate the measures which still prevent in certain countries the free practice of incineration, on the following grounds: (a) Its superiority to inhumation from the public health point of view; (b) because in no case of cremation among the many thousands that have taken place in France, England, the United States, etc., has injury resulted to public security or violence been done to religious views or the feelings of reverence for the dead; and (c) because resolutions in favor of the practice have been passed by every international health congress since 1880.

In Europe and America seventy crematoria have been established, in which many thousands of bodies have been cremated, Italy possessing twenty-seven of these establishments, the United States twenty, Germany six, England five, France three, and Switzerland and Sweden each two. In France this mode of disposing of the dead, which sanitarians unanimously approve, can only be practised at present in three cities—Paris, Rouen and Rheims—which each possess a single crematorium. Great distances must, therefore, be covered and heavy charges be incurred in carrying out this salutary practice. The report recommended a resolution for adoption by the congress tending to multiply these establishments, inviting municipal authorities to provide in their districts one or more crematoria. These authorities might also be asked to erect a crematorium or a distinct portion of a crematorium, in which to cremate the bodies or *debris* brought from hospitals, so as to keep them apart from the bodies brought by the families of the dead. A simplification in the formalities required is also a desideratum. These suggestions of the sub-section were transmitted to the general secretary.

Papers were read in other sections of interest to the municipal and county engineer and surveyor, the most important being one on "Insanitary Dwellings" by Dr. Challamel, advocate of the Court of Appeal, Paris, and another on "Hotel Bedrooms from the Sanitary Point of View," by M. Gustave Rives, architect to the Touring Club of France.

UNSANITARY DWELLINGS.

The slow progress made in France in carrying into execution the legislation existing since the law of April 13, 1850, in favor of administrative supervision over the construction of dwelling-houses, is attributed in the report to the permissive character of the legislative measures passed. The legislator has presumed too much on the enlightenment and independence of communities in making the adoption of legal remedies optional instead of obligatory. The fact is, that only in five towns of France during fifty years have the commissions charged with this supervision worked regularly and continuously—namely, in Paris, Havre, Lille, Roubaix and Nancy. Dr. Challamel is of opinion that municipal action for this purpose presents many defects, that a commission on unsanitary dwellings should be set up in the chief town of each of the departments of France, and that its powers should be obligatory and not permissive. He proposes that each departmental commission shall consist of fifteen members, five medical men or sanitarians, five architects or engineers, and five representatives of landed proprietors. These commissions should have free access to all public buildings (in presence of the representatives of the administration) as well as to private properties. All plans of new buildings should be submitted for approval to this commission, and should be considered as approved if no objection be raised by the commission within twenty days. No dwelling-house to be built without the authorization of the commission. The report was fully discussed by the section and several changes in its recommendations were suggested for the consideration of the congress.

HOTEL BEDROOMS.

The importance of securing healthy conditions in the *chambre d'hotel* has been greatly augmented by the introduction of the cycle and the automobile, which have radically changed all our modes of locomotion. The majority of small towns and villages in France, particularly those at a distance from a railway station, possess few hostelries in which the hygienic conditions of the bedrooms are not deplorably defective. The Touring Club of France, with its 80,000 members and its ample funds, has done something by offering prizes to encourage the keepers of country hostelries to move forward to improve matters, and the club exhibits at the Exposition Universelle in the Palais d'Hygiéne a type of hotel bedroom in which the recommendations of the report submitted to the

congress are practically applied. The report gives in detail the conditions desirable, the leading points being that, wherever possible, the bedroom should have a sunny aspect, that it should be not less than 10 feet high, 10 feet wide, and 16 feet 6 inches or 17 feet long, with a minimum air space of 1,650 cubic feet, or 1,700 cubic feet. The means of natural ventilation (windows and chimneys) are important elements in the sanitation of a bedroom. The windows should be high and without jalousies or exterior blinds, and should have fastenings that will exclude currents of air in winter. Every chimney should be supplied with a ventilator communicating with the exterior atmosphere, and a screen to counteract the gusts of winter. The chimney-piece should be of plain white marble, on which every stain will show and compel cleansing. A hearth of cast iron, to avoid breakage, is recommended. Ceilings should be plain and without cornice or mouldings, the angle between them and the walls being avoided by forming a hollow curve, which will prevent the lodgment of dust. The best bedroom floor is the ordinary parquet of wood without intervening tiles. The joints ought to be kept close to prevent the lodgment of dust, and, if covered, the carpet should be loose and easily raised for washing and cleansing the floor. As to the walls, if papered at all, which the report declares to be undesirable, the paper should be glazed, so as to be, to a certain extent, washable. Walls covered with any woven fabric are an abomination. They are the best possible receptacles for dust and microbes. The surfaces should be smooth, but if not covered with oil-point varnished they should be simply whitewashed with lime. Preference should be given to the new varnished paints, of which so many have come recently into use, such as "Ripolin," which resist atmospheric influences, the action of sulphur, turpentine and the usual disinfectants. Such paints can be washed, and even when washes containing diluted acids are properly employed, they remain uninjured. They can easily be washed with soap and hot water, and that is what the report most recommends. The objections to such varnishes are that they are costly, difficult of application, and that, being of a single tint, they are not very decorative. Exact details are given of the furniture to be recommended, which should be limited to what is strictly necessary, and should be as simple as possible. The arrangements for toilet-rooms, water-closets, soil-pipes, etc., are also given in detail, the following being among the more important of the points insisted upon in the report. The windows

should run up to the ceiling, and the upper portions of the closets and dressing-rooms should be so fitted with ventilating frames that efficient ventilation can be maintained without excessive draught. The soil-pipe, which should be of cast iron, should be protected by a jacket, without angles where dust can collect. In order to prevent leakage a grating of galvanized-iron wire is fixed to the wall, the interspace between it and the soil-pipe being filled with cement. For the water-closets there must always be an ample supply of water, and the report recommends that the plumbing work should be studied with the utmost care. The water supply pipes should be covered with sheet or cast iron. The basin and trap should be of glazed stoneware in a single piece, in order to avoid a joint, which is always difficult to repair. The flushing tank ought to be placed as high up as possible, but in such a position that its mechanism can be easily examined, and where frost is to be apprehended the water in it should be uncongealable. The recommendations of the report were generally approved, and most of them were adopted for submission to the full congress.

FINAL SITTINGS.

The final sittings of the sections were held on Friday morning, the 17th inst., and the closing general meeting of the congress in the afternoon. During the last sitting of Section III. a number of interesting communications were made by MM. Kontkowski (Russia), Sormani (Italy), S. H. Adams (York, England), and Dr. Mansel Howe (Paris).

M. KONTKOWSKI, the Russian delegate, in support of a demand to put on the order of the day a recommendation that the question of the admissibility of sewer water into rivers should be entrusted to a committee to study and report to the next congress, said it was not often practicable to obtain absolutely pure water, but it was necessary to ascertain to what extent and under what conditions impurities might be admitted without injury to health, a point not yet satisfactorily settled. In Russia they had such rivers as the Volga, which contained an enormous mass of water, and into which perhaps considerable quantities of sewer water might be admitted with impunity. They had regulations in Russia forbidding this, but the practice existed in spite of the regulations. The discharge of waste water was only permitted as a temporary measure, and only then if the authorities concerned declared that they had some scheme of irrigation in view.

M. BECHMANN, the president of the section, suggested that this subject might be included in the programme to be drawn up by the International Committee already appointed, which would hold its first meeting in that room at 1:30 P. M.

Prof. SORMANI (University of Pavia) read a communication on the best position for the pavilions of hospitals. He argued that generally the longer axis should be north and south in order to obtain the maximum of sun.

After some remarks from M. PUTZEYS (Belgium), pointing out that the prevailing winds must first be taken into consideration in Belgium, and from Prof. TRÉLAT on the general principles upon which the aspect of any particular hospital should be decided upon, the communication was laid upon the table.

Mr. S. H. ADAMS (York) gave, in French, a *résumé* of his report upon the bacterial treatment of sewage in England, which the section desired to receive as a communication. The communication was illustrated by photographic views on lantern slides of the various types of bacteria beds in use in England. He dealt first with the experiments made by Mr. Dibdin upon a one-acre filter at Barking, which, it was found, lost in capacity and finally choked when worked continuously, but when worked intermittently maintained its efficacy. He instanced the Sutton beds as an example of double contact and the Hampton works as an example of triple contact. The author's automatic apparatus in operating such beds was exhibited, with other views showing active and quiescent sludge. Photographs of the Exeter filter-beds were also exhibited as an example of the continuous system on a large scale. The Salford works of Mr. Corbett were described. The sewage here is discharged from suitably-arranged pipes in a fine spray over the entire surface. The use of coupled syphons for flooding a filtering area was explained, as also the operation of Colonel Ducat's interesting aërating filters at Hendon. In support of the statement that the removal of sewage sludge by biological means was not the least important feature of the system, other views were exhibited of some English sludge lagoons. Some paragraphs were quoted from Dr. Rideal's work referring to experiments made to support the conclusion that biological processes aided in the destruction of dangerous organisms rather than in sustaining their vitality. The communication was warmly received, and a vote of thanks was accorded to Mr. Adams by the section. We expect to publish the communication of Mr. Adams more fully at an early date.

Dr. MANSEL HOWE read a communication on "House Sanitation" as carried out in England, with especial reference to plumbing work, the communication concluding with a resolution in favor of exacting from every plumber employed to execute work in connection with house sanitation a proper certificate of competency. The widespread adoption of British systems of house sanitation to Continental cities was, Dr. Howe thought, sufficient justification for a communication on the subject to an international health congress. Every decade, he said, brought with it many changes and improvements in sanitary matters, and in the case of house sanitation these had been both numerous and far-reaching in their effects. These changes had been brought about so rapidly that work executed only a few years since could hardly at the present time be regarded as "up-to-date," and in many instances would fail to satisfy local authorities. What he had to say related primarily to the sanitary work which the plumber had to execute. Experience demonstrated that no direct communication should exist between the waste pipes of baths, lavatories and sinks, and the soil pipe which carried away the waste from the water-closets and urinals. The various effluent pipes ought to be arranged (as they readily could be) in such a manner that the stench contained within the soil pipe could not by any possibility find egress through any of the lavatory fittings. This was to be accomplished by a double system of pipes—one for the water-closets and urinals and one for the baths, lavatories and sinks, and the object could not be achieved efficiently in any other way. The unnecessary multiplication of plumbers' pipes was doubtless to be avoided if it could be done without subjecting the inmates of a dwelling to undue risk. The reason for this dual system of pipes was obvious. At the present day baths and lavatory basins were to be met with in dressing-rooms communicating with sleeping apartments, and in these hot-air cupboards or ornamental hot-water pipes were often to be found, and occasionally they were placed in an alcove in the sleeping apartment itself, separated from it merely by curtains. These arrangements were due to the increasingly luxurious habits of modern life. If such a sleeping-room were used as a sick room, which must in all probability occasionally be the case, the arrangement of the pipes connected with the bath and lavatory basin should be perfect. Unhappily it was not infrequently the case that the bath trap was the least reliable fitting in the domestic sanitary equipment. The cause of this was the difficulty in providing a

sufficient depth of water in the trap, defectively constructed as it too frequently was. It was also partly due to the fact that the high temperature of the bath-room was usually maintained. The danger of the water seal beneath the bath disappearing by evaporation was highly probable when the bath remained unused some days together. In these circumstances, if the waste pipe of the bath were connected with the soil-pipe, sewer air would be laid on directly to the sick-room, thereby seriously jeopardizing the patient's life. Ultimately, of course, these shaft pipes discharged their contents into a common conduit—the house drain—but before this took place the lavatory pipe must be efficiently trapped. The rain-water pipes should also be trapped before discharging into the house drain, the drain itself being protected from the back pressure of compressed air and gas from the public sewer by the interposition of a disconnecting trap. No direct communication must be allowed with the rain-water pipes and either of the two systems of pipes already referred to. All branch rain-water pipes were untrapped, as they are merely conduits, and if any direct communication were established between them and the soil pipe or the lavatory pipe, then, in either case, they would immediately become a means of disseminating foul emanations all round the outside of the house and of polluting the atmosphere in close proximity to the windows. Hitherto the pollution of the air around the domicile had not been sufficiently guarded against. He thought it was high time some energetic steps were taken to stop the contamination of the atmosphere outside the house. The outer air, by natural ventilation, constantly passed within the homestead and was breathed by the inmates. The bad odors and gases evolved from effluent pipes must escape to the outside somehow, but their escape must be regulated and brought completely under control. Unless that were done natural ventilation by open windows would become impossible.

The resolution proposed by Dr. Mansel Howe in favor of exacting from every plumber, before undertaking plumbing work in connection with the sanitary arrangements of dwelling-houses, that he should be possessed of a certificate of competency to execute such work from some properly constituted body of experts, was then adopted by the section, with an addition suggested by Prof. Corfield requiring certificated plumbers to execute such sanitary work under the direction of competent men, such as engineers, architects, etc.

CLOSE OF THE CONGRESS.

The closing sitting of the congress was held in the grand amphitheatre, the presidents, vice-presidents and secretaries of the sections occupying seats around Prof. Brouardel on the däis. The general secretary, Dr. A. J. Martin, read out *seriatim* the resolutions adopted in the various sections, which, with few exceptions, were accepted without alteration. The final act of the tenth congress was to decide upon the place of meeting of the eleventh International Congress of Hygiene and Demography. Berlin had put in a claim for the honor, but it was almost universally felt that Brussels had a prior claim, because it had waived its right, which had been conferred by the ninth congress, held at Madrid in 1897, in favor of Paris, on account of the occurrence this year of the Universal Exhibition in Paris. When the president announced the decision in favor of Brussels, it was accordingly received with general acclamation. M. Pützeys, of Brussels, warmly thanked the congress on behalf of the King and the Belgian Government for the choice, expressing the conviction that the congress would be received in Brussels with the same unstinted hospitality that had been accorded to it in Paris and all other cities in which it had held its sittings.

The proceedings of the congress soon after closed with the customary votes of thanks, that to the French Government, the medical faculty, the municipality and people of Paris, for their unbounded hospitality and the warmth of their welcome, being proposed on behalf of all the foreign delegates by M. Conrad, the Dutch representative, who, in concluding his address, expressed the general wish for the well-being and prosperity of France (great applause).

BACTERIAL TREATMENT OF SEWAGE—DOES IT DESTROY PATHOGENIC GERMS?

At the congress of the British Medical Association August 2, 1900, Dr. A. C. Houston contributed a paper on the question, "Can Modern Systems of Sewage Treatment be Depended Upon to Remove the Bacillus Typhosus and Allied Organisms?" Broadly speaking, he said, the question was whether the modern system of "treating" sewage in septic tanks and bacterial filters could be relied upon to remove or destroy pathogenic germs. He proposed to confine his remarks wholly to bacterial filters, because septic tanks,

whatever their advantages might be from the chemical and practical point of view, could not, he thought, be regarded as much better than modified cesspools from the point of view of the epidemiologist. The impossibility of the microbes being retained in biological filters would be readily appreciated, and where the attempt had been made to use finer material, with the object of holding back the bacteria, the filters had usually, if not invariably, become choked up. In fact, it might be stated in general terms, and with comparative safety, that the mechanical separation of the micro-organisms in sewage by the use of bacterial beds was virtually impossible. After exhibiting a number of lantern slides, illustrative of his subject, and giving details of various experiments that had been carried out, he said these proved that some pathogenic microbes passed through filters in practically undiminished numbers, and they indicated that, until positive evidence to the contrary was forthcoming, it would be wise to regard the effluent from bacterial beds as no more safe in their possible relation to disease than crude sewage. He wished it to be understood, however, that he was chiefly dealing with the Crossness experiments, and it did not follow that these results had a constant value in the case of all bacterial filters. It was only right to add that, from the chemical and practical point of view, the coke beds at Crossness were highly efficient. Thus, the suspended matters were removed, the reduction in the amount of dissolved oxidisable matter was very striking, and the effluents were apparently non-putrescible. One lesson to be learned from these experiments was that the element of time or "delay" was an all-important factor, and that it was doubtful if any bacterial process in practical operation at the present time "treats" or "detains" the sewage for a sufficiently long period to allow of the complete destruction of all the pathogenic germs by bacterial agencies.

Dr. Thresh said this was a question which wanted ventilating, for so many authorities thought that if only they adopted a modern system of treating their sewage, they would get rid of all their difficulties. It might happen, in some cases, that the effluents that went into the rivers were as dangerous as the sewage itself. Dr. Groves said the Local Government Board had taken a certain amount of responsibility, for which the community ought to be grateful, in refusing facilities for the bacterial filtration and treatment of sewage.

THE PERSISTENCE OF DIPHTHERIA.

From July Bulletin New York State Board of Health.

Questions regarding the course and management of diphtheria are at this time the most interesting of any coming before sanitary investigators. Newly observed phenomena and their bearing on the control of outbreaks are of practical application and should find record for the earnest consideration of health officials. The following is a summary of observations of a very interesting outbreak at the Willard State Hospital, by Dr. W. A. Macy, medical superintendent:

Early in 1897, diphtheria was brought into the institution through employees who had been in contact with a case nearby. There followed an epidemic, a moderate number of cases developing from time to time for six months, when it ceased without recurrence then or during the following year. In June, 1899, diphtheria broke out again, probably likewise imported, spread rapidly, 75 cases occurring, of mild type. It has continued, with intermissions of a month or two, till now, there being at present no actual diphtheria, but a number of germ cases in isolation.

The condition is of a long lasting epidemic, in an institution mainly adults of 2,700 population, under resident medical supervision, with a well appointed laboratory used on so extensive a scale that every member of the community had cultures taken over and over again, all of which are recorded. It was observed: (1) that the type of the disease varies in different epidemics; in the first, 1898, nearly every one exposed, even slightly, took diphtheria, but the course of the disease was mild; in the present epidemic it was much less infectious and much more virulent. (2) The germs of diphtheria can maintain activity with much persistence outside the body, and resist the action of ordinary disinfectants. Recurrence of the epidemic after all the people were found germ free, was found to occur in rooms which after occupation by the sick had been subjected freely to formaldehyde, sulphur fumigation, washing with bi-chloride, hot soap-suds or soda solution, both walls and wood work. Twenty-five cultures were often taken before a building was found free. (3) It was found that cases discharged from quarantine after three negative cultures communicated diph-

theria, and new cultures showed Klebs-Loeffler germs present; then sick were discharged only after three negative cultures taken on alternate days. None of these thus tested were found afterward to show the disease germs, but nothing short of this was found trustworthy. (4) Presence of the germs in healthy throats was found; they persisted there for weeks; cultures were almost or quite as pure as from membranous cases; virulence tests in the laboratory showed them to be as dangerous as those from cultures taken from clinical cases. Membranous diphtheria followed exposure to such, and even at second hand, for in one clear instance a person associating with a germ case without sore throat carried in his clothing the disease in virulent form into a family living several miles distant, bearing germs taken from that case. It would appear then that bacteriological diphtheria is as potentially dangerous as clinical. (5) Change in the shape of germs attended convalescence; when these "degenerate" forms occurred the disease generally soon yielded. There was reason to think that these attenuated forms may under conditions favorable to rapid development increase in strength, but that they have not sufficient virulence to be actually dangerous. While in membrane cases the bacilli followed a definite life history, those from a normal throat may differ daily. (6) Immunization by anti-toxin of all employees, though whom almost solely it spread, and of all exposed patients gave reason for satisfaction, and this experience commends its use for all much exposed. A lessened dose on repetition is commended; and to give it in fleshy part of the body not pressed on by clothing, not in the extremities. It was used with great confidence in treating the sick, and of 75 membrane cases there were no deaths.

An epidemic of diphtheria, showing these phenomena of persistence, of resistance to common germicide treatment, of extensive distribution among immune adults, of prevalence on so large a scale, and occurring under conditions favorable to so elaborate management and detailed investigation rarely occurs. The use of anti-toxine was tested on a large scale, there was much study of disinfection, and the laboratory work was carried to unusual extent, 21,000 cultures having been taken during the year, all of which with a history of every case, have a complete card record. Of the mass of technical study only the mention of some practical observations furnished by Dr. Macy find room here.

HEALTH PROTECTION GUILD.

The Boston "Herald" of recent date reports the incorporation of "The National Wage Earners' Guild," on the line of protective effort which has been followed by the German government for nearly twenty years with marked beneficial results to the laboring classes.

The prime factor in bringing about the incorporation of this Guild was a widespread feeling that some better means for protecting the health and improving the sanitary surroundings of American wage earners than those now prevailing were an imperative necessity, and it was also felt by the organizers of this Guild that there could be no better field for intelligent charity than the providing of some means to protect the wage earner against the frequent losses incidental to the maintenance of illogical beneficiary and sick benefit organizations.

Many of the most competent physicians of the day frankly admit the unsatisfactory way in which they are employed by even the most intelligent city residents, and one of the most eminent members of this profession has, in discussing this subject, queried: "Is the system of making a physician's income from a family or community dependent solely upon the amount of sickness occurring in it the best that can be devised?" "Such," he adds, "is our system. Its philosophy might be condensed into the motto: 'Millions for cure, but not one cent for prevention.' "

It is in the line of this protective work that the newly organized Guild will direct its labors. After a careful study of the returns of the system of health protection for wage earners, which has been referred to as a feature of the German governmental work, an approximate estimate of the expense of caring for large numbers of wage earners has been arrived at by those who have organized this Guild. It is designed that the members of the Guild shall have the protection resulting from the care of competent physicians, at the bare cost incidental to it.

The value of the work contemplated by the Guild can best be realized from the fact that in Germany, where, it is stated, nearly 10,000,000 wage earners are now enjoying the benefits of the health protective plan referred to, the employer readily complies with the law, which compels him to pay one-half of the expense incidental

to this protection. The physicians and surgeons of the Guild will be drawn from the best professional sources, this department of the work of the new corporation having been intrusted to Dr. R. Sherman York, of Boston.

It is planned to give members of the Guild the right to elect whether they will be visited by the corporative physicians, in case of sickness, or be treated at the Guild hospital. The houses facing Franklin Square on East Brookline street, extending to Washington street, have been leased for a long term of years by the Guild for hospital uses. These buildings are being entirely refitted and furnished with the most perfect hospital equipment possible, making the Wage Earners' Guild Hospital a model institution in every way.

The Guild will employ experts in the study of sanitary matters, whose duty it will be to inspect the homes and work places of its members, and secure the correction of any conditions which threaten the health of its members. The Guild will also safeguard its members from injudicious and ill-advised investments in the line of life insurance, and by contracts made will enable its members to secure, by small weekly payments, protection in this line, which has heretofore been unobtainable by the average wage earner. By the plans of the Guild, all money payments will be made to the Mercantile Trust Company of Boston, and the company will act as trustee, jointly, for the members of the Guild and those to whom their payments are due under its rules.

These weekly payments will average 35 to 40 cents, with no fees for admission or membership, all healthy men and women between 21 and 40 years being eligible. This fee will secure the member free medical or surgical attendance, at home or in the Guild hospital; will insure a proper stated inspection of his or her sanitary surroundings, and so provide that $500 will be paid in case of death to the member's family or heirs, the return of fully two-thirds of all the payments to the member, if so desired, at the expiration of the first protective period, which will continue for twenty years.

The incorporators are the Rev. Edward Everett Hale, D. D., of Boston; J. Thomas Baldwin, treasurer Massachusetts Title Insurance Company, Boston; the Rev. P. Ronan, pastor St. Peter's Church, Meeting House Hill, Boston; Henry D. Forbes, cashier National Bank of the Republic, Boston; Neil McNeil, of McNeil Bros., builders and contractors, Boston; Henry F. Miller, presi-

dent Miller Piano Company, Boston, and Robert A. Woods, South End House, Boston.

Although the work of the Guild has thus been begun in Boston, its plans contemplate an extension of its efforts throughout the country, negotiations for the opening of business headquarters and the establishment of hospitals being already well in hand in the cities of New York, Philadelphia, Pittsburg, Baltimore, Cleveland, Cincinnati, Chicago and St. Louis.

THE MASSACHUSETTS ARSENIC LAW.

The Massachusetts State Board of Health (Boston "Advertiser," Aug. 25) is about to enter upon one of the most important enterprises ever undertaken in this Commonwealth.

This is the practical elimination of arsenic from every woven fabric or paper made or sold in this State.

It has secured an act fixing severe penalties on every "corporation, person, firm or agent who directly, or by an agent manufactures, sells, exchanges, or has in his custody or possession with intent to sell or exchange any woven fabric, or paper, or article of dress or of household use containing arsenic in any form.

The State Board has been at work for fourteen years for such a law, and the last legislature gave it the power.

The law as approved May 18, becomes operative Jan. 1, 1901, and places the power in the hands of the State Board.

Its text is given in full herewith. It is short but powerful. Its enactment was quiet and escaped the attention of thousands of men who will be directly or indirectly affected by it.

(Chap. 325.)

AN ACT RELATIVE TO THE MANUFACTURE AND SALE OF TEXTILE FABRICS AND PAPERS CONTAINING ARSENIC.

Be it enacted, etc., as follows:—

Section 1. Any corporation, person, firm or agent who directly or by an agent manufactures, sells, exchanges, or has in his custody or possession with intent to sell or exchange, any woven fabric or paper containing arsenic in any form, or any article of dress or of household use composed wholly or in part of such woven fabric or paper, shall on conviction thereof be punished by fine of not less than $50 nor more than $200: provided, however, that the section shall not apply to dress goods or articles of dress con-

taining not more than 1-100 grain, or to other materials or articles containing not more than 1-10th grain of arsenic per square yard of the material.

Section 2. The State Board of Health shall make all necessary investigations as to the existence of arsenic in the materials and articles mentioned in section one of this act, may employ inspectors and chemists for that purpose, and shall adopt such measures as it may deem necessary to carry out the provisions and to facilitate the enforcement of this act.

Section 3. This act shall take effect Jan. 1, 1901.

Approved May 18, 1900.

This law is conceded to be practically as strong and sweeping as even the German law.

One leading manufacturer in Boston speaks of it as "practically prohibitive," as affecting certain classes of goods.

The following list of industries of Massachusetts was submitted to Dr. Abbott, secretary of the State Board, who checked them off with the statement:

"They are all on our list for investigation, and there are others!"

Awnings.
Boxes (paper).
Buttons, and dress goods.
Carpetings.
Clothing.
Cordage, and twine.
Cotton goods.
Flax, hemp and jute goods.
Hosiery, and knit goods.
Paper and paper goods.
Print works, dye works, and bleacheries.
Silk, and silk goods.
Sporting, and athletic goods.
Whips, lashes, and stocks.
Woollen goods, and worsted goods.

The products of these industries amount to millions. And millions more of goods of these classes are imported and exposed for sale here.

It is true that probably only a fraction of some of the goods of these classes sold now contain more than the amount of arsenic mentioned. But with industrial history as it is, these goods must be considered by the health authorities.

Arsenic has long entered into the coloring of woven fabrics and paper. According to the State Board of Health, it is used in not only the "greens," but other colors.

Experts frankly acknowledge that the brilliancy of dyes is in many cases dependent upon arsenic in some form.

How restrictive the limit of 1-100 grain in dress goods is, and 1-10 grain per square yard in other articles, is a matter to be worked out.

It is only fair to say that to some leading interests it has a very difficult look. The law's extent is such that it affects wholesaler and retailer alike. And the sale, exchange or possession is penalized at one stroke.

The State Board of Health has long been impressed with the danger of arsenical poisoning from fabrics and papers. It found the opposition immensely strong at first. Arsenic was used almost with recklessness. The results that have followed were fatal in many cases.

But conditions have been considerably changed. Our own manufacturers, in particular, have seen the danger. The use of arsenic has been greatly diminished. It can now be put a stop to except in homœopathic doses, as it were, of minute degree and harmless.

The fight to drive it out altogether will, of course, create considerable disturbance. There are millions of dollars' worth of goods in the classes named that must be scrutinized.

The manufacturers and retail dealers take a high stand, defensive of the public health. The law exists. They are ready to obey and co-operate. They realize it will be of some expense to themselves.

But they also realize a still greater effect it will have on importers with whom they compete. The fabrics and paper brought in here for sale from the outside must be as free from arsenical taint as any of our own products. The Massachusetts factories and mills complying with the law will have an enormous advantage not only here in the home market, but outside, when the law gets into force and its effects are made widely known.

The task before the Board of Health seems immense. The analyses themselves demanded may be of very large numbers.

But for the next few months they will be at their busiest, examining all stuffs submitted. They have notified many large interests, and are ready to aid them in compliance with the statute. But the statute must be obeyed.

WHAT ARE THE MOST SUCCESSFUL METHODS OF TREATMENT OF TUBERCULOSIS?*

By Dr. Karl von Ruck, of Asheville, N. C.

The opening paper on "Camp and out of Door Life as an Aid to the Permanent Cure of Tuberculosis," contains the remarkable preamble that "It is now conceded by many, both physicians and laymen, that hospital and sanitarium life for the treatment of consumption is a failure. Indoor life and treatment must now give way to outdoor camp and tent life."

This statement is the more remarkable at this American Congress for Tuberculosis, when only eight months ago the Tuberculosis Congress in Berlin assembled for the chief purpose of giving aid and influence to the movement of establishing sanitaria for the consumptive middle classes and the poor; in full recognition of the excellent work heretofore accomplished by both private and public institutions, especially designed and conducted for the treatment of tubercular patients.

The author of this statement seems to labor under, or to convey, the impression that in sanitaria for consumptives the patients are confined to their rooms, and are actually deprived of the advantages and benefits from the open air treatment.

To correct such a misapprehension, I desire to remind the distinguished author that proper "open air treatment" had its origin with special sanitaria for consumptives, and although change of climate was a recognized aid in the treatment of consumption centuries ago, the credit for systematic climatic treatment, or open air treatment, as a valuable therapeutic measure, and as now recognized by the foremost men in the profession and by the leading phthiso-therapists of all countries, belongs to the father of phthisotherapy, Dr. Herman Brehmer, and to his distinguished pupil, Dr. Dettweiler, the former respective heads of the Sanitaria for Consumptives in Goerbersdorf and Falkenstein.

Without considering the universally acknowledged lack of facilities of general city hospitals for the proper care of phthisical patients, I may say, that this lack lies chiefly in the want of open country, spacious grounds, piazza room for out of door life, and a

*Read before the Medico-Legal Society in joint session with the American Congress of Tuberculosis, February 22, 1900. From "Medico-Legal Journal."

sanitarium that lacks these facilities and does not take advantage of them cannot be spoken of as a sanitarium for the class of patients under consideration.

The evidence which the author adduces, as to the predisposition of those who lead an indoor life or who follow dusty, indoor occupations, does, however, not necessarily prove that the out of door life is all that is necessary for the cure of tuberculosis, and for the difference in predisposition between an office clerk or a factory hand, and a farmer, we must also take account of the difference of exposure to infection. What applies to the mode of life in close confinement of men applies equally well to domestic as compared with wild animals.

It would be folly and a wasting of words to controvert the fact that an out of door life, free from unreasonable hardship or exposure, is conducive to the best physical vigor, and climatic treatment of tuberculosis, whether carried out in a special sanitarium of modern construction and with necessary comforts and conveniences, under proper hygienic and diatetic regimen, or in a camp of tents, as the author advocates, has this and this only for its object.

As to the preference for the well equipped sanitaria to the camp of tents and vice versa, there may be a difference of opinion, but having never conducted such a camp sanitarium myself, I can only mention my misgivings, and if I am wrong, I shall be grateful to be corrected. The only advantage that I can now see for the camp of tents over the modern sanitarium is the cost of construction and maintenance, but this is largely offset by other considerations which appear to me quite valid.

Of my misgivings I may mention the want or difficulty of obtaining a proper and unfailing supply of necessary stores and provisions, especially of abundance of fresh meats, milk, cream and butter, and if these are available from a distance, then arises the difficulty of proper facilities and conveniences for their keeping, especially in warm weather.

The difficulty of keeping the camp in a perfect sanitary condition.

The danger of contracting colds and catarrh, especially to weakly and delicate patients, and even to those still of fair vigor, when an abrupt change is first made.

The difficulties that must arise in the management and dietary of cases having active symptoms and complications.

The necessity of shifting the camp a long distance for different seasons of the year.

But, granting that all these disadvantages are overcome, I see no material gain in other directions. A well constructed and properly equipped institution, located in a favorable climate, can carry out the climatic treatment every day in the year; it has facilities to do this in the coldest weather, in rain, wind or sunshine.

Patients who seek recovery from phthisis are, as a rule, sick. They often have fever, and night sweats, poor appetites, and impaired digestion, they have frequently been confined to their houses, rooms or bed for considerable periods before they seek climatic and other appropriate treatment, and it would seem to me to be a badly chosen time to start out in the camp and tent life at such a stage of their illness.

A special institution can bring about the change in a more gradual and safer manner, and can afford its advantages to cases having acute processes, in the treatment of which the comforts and conveniences of a modern building are indispensable.

It is not only in the tent of a camp that patients can have all the out of door life that they need for their best interests, and the same is true of proper rest and exercise. The only difference of also sleeping in a tent instead of in a comfortable room, well lighted and ventilated, seems to me in favor of the latter. At any rate, sleeping in a tent is not a requisite to the maintenance of the best of health, nor to its recovery when it has been lost, and apart from this, a good sanitarium for tubercular patients affords everything else and more than the camp could supply. Moreover, it could easily provide the tent also for selected cases if there were any good reason for having it.

I cannot but agree with the author as to the necessity of constant professional care and control of phthisical patients, and of strict individualization for each case. I doubt, however, the utility of over-feeding so long as the patient takes all the nourishment that he can possibly digest and assimilate.

Such efforts have usually proved dismal failures, and a better way, in my own practice has been found, in the removal of the anorexia, if it exists, by giving due attention to its cause.

Patients who are free from fever and from disorders of the digestive organs, and who avoid excesses in drink and food, usually maintain a good appetite and gain in weight and strength if their general care and treatment are correct. The only tonics that they usually need is plentiful fresh air and sunshine, good food, sound sleep and the proper amount of rest and exercise which is requisite or permissible for the individual case.

But with all these advantages, pulmonary tuberculosis is not so readily cured as is frequently supposed, and while the fever may disappear, and the cough may subside; while the patient may have regained his strength and consider himself well, he often abandons the required regimen too soon.

If at such a time we apply a tuberculin test, we usually find that the supposed cure is, after all, only the advent of a latent stage.

If such a patient return to his former home, the out of door life is likely to be given up, or greatly restricted. Resuming his former social and other cares and responsibilities, especially under less favorable climatic conditions, he soon begins to lose ground, and after a few months more, he is liable to be where he started the year before.

To obtain permanent results means to give nature an opportunity to cause fibroid transformations of recent and the effectual encapsuling of older or caseous tubercular deposits, and for the healing and cicatrization of open cavities. This is not accomplished by a short season of camp life, nor by open air treatment even in an institution, and such a result must not be assumed, because the general health has been restored, or the general symptoms have for the time disappeared.

To pronounce a patient actually cured of his tuberculosis, he must not respond to a full test dose of tubercle toxins, and to accept the ulcerative phthisical processes as healed and cicatrized, there must have passed at least a number of months during which the physical examination in the absence of cough and expectoration justified such an assumption.

Under climatic treatment alone quite a number of years are often required for the complete encapsuling and obliteration of the present lesions, and before this is accomplished incidental inflammation of the lungs from colds, grippe, pneumonia, etc., may again change the latent process into one of ulcerative phthesis.

OYSTER CULTURE IN FRANCE.*

Oysters are a luxury in Europe. The natural beds have been exhausted, as the American beds are rapidly becoming, and artificial culture has long been depended upon for a supply of this luscious bivalve. The chief breeding ground in France is the Bassin d'Arcachon, a triangular tidal bay about nine miles on each

*From Consular Reports, No. 233.

side, entirely landlocked and opening out of the Golfe de Gascoigne (Bay of Biscay) into the Department of Gironde by a narrow channel about three miles in length. The coast is sandy and deserted. A solid forest of maritime pines (*Pinus pinastero*) hand planted during the present century, has checked the inland march of the sand dunes and protects the basin from the southwest winds which blow fifty out of the fifty-two weeks of each year. The shallow bay is networked with navigable channels, between which at low tide rise the half clay, half sand flats utilized for breeding the succulent mollusk. During the low spring tides, the flats are covered with quantities of a cheap variety of ordinary roofing tile, which has been previously coated with a sort of coarse whitewash. The spawn brought in by high water catches on these tiles, and the lime of the whitewash helps the little mollusk to form his first shell. Toward winter, these tiles are taken up and carefully scraped. The oysters, as large now as one's thumb nail, are spread in flat covered trays, or baskets, of closely woven osier to protect them from the starfish, crabs, and other enemies, and moved nearer the salt marshes, on the east side of the basin, to grow. When they have become a little accustomed to an independent existence, they are placed in trenches a little below water level, which are provided with sluice gates, by which they can be flooded at will. They are thus prevented from being chilled in winter or dried up in summer, and are easily protected from enemies, the gates being covered with wire netting of fine mesh; but the primary aim of the gates is to accustom them to being deprived of water—that is, to teach them to keep their valves tightly closed when out of it. In about eighteen months their education in that respect is complete, and they are raked up, barreled, and sent on a journey of several days to the copper rocks at Marennes, France, and to Whitstable, England, to fatten and assume the bilious green tint and brassy flavor demanded by European epicures. About 250,000,000 are shipped annually. The work on the beds is done by bare-footed men and women, both clad in bright crimson knee breeches and sweaters, which render the sexes quite undistinguishable. The regular trenches and dikes, kept in place with spiles interlaced with wattles, look like a Dutch garden.

To one accustomed to the plump, clean, white and gray American bivalve, the flabby, yellow or greenish European specimen is not inviting. The shells are flat, thin, irregular, and as slimy and corrugated as an old barnacle, while the inmates are about the size and thickness of a 50-cent piece for a 5-inch shell. On the spot,

they sell from 7 to 10 cents a dozen. Elsewhere, they command more, and the greener, the higher prices. Oysters are never eaten here except on the half shell. A suggestion to put them into soup or patties, to scallop or stew them, shocks a French chef as a proposition to broil a watermelon would a Carolina cook. I think a "pan roast" would be regarded here as little less than sacrilege. Even when by much persistence you have achieved some form of cooked oyster, the chances are infinite that the most noticeable result will be a fit of homesickness caused by regretful memories of the delicious "Blue Points" or succulent "Lynn Haven Bays." It is to be hoped that our oyster men will learn and practice the art of propagating and nourishing the oyster so as to preserve both its superior size and flavor.

ALBION W. TOURGEE, Consul.

BOURDEAUX, November 30, 1899.

"THE ICE HABIT" IN ENGLAND.

A BRITISH REPLY TO SOME AMERICAN ICE LOVERS ABROAD.

From "The Glasgow Herald."

The reports of American consuls upon the commercial, industrial, and even social methods of the foreign nations among whom they make their temporary sojourn are sometimes both amusing and instructive. These gentlemen are often keen observers as well as practical business men; they do not study the phenomena which come under their notice through official glasses, and there is a refreshing freedom from red-tapeism in both the style and the manner of many of their reports. Thus the remarks of Mr. Marshal Halstead, the United States Consul at Birmingham, in a report he has recently sent in to the Bureau of Foreign Commerce on "the growth of the ice habit in Great Britain," will be read with interest by a good many people besides his own countrymen.

Mr. Halstead is of opinion that what he calls the "ice habit"—by which, apparently, he means the practice of using ice, almost as a matter of course, to cool the water and other beverages so largely consumed during the summer time—is making rapid progress in this country, and this he attributes chiefly to "the incessant clamor for ice in hotels and public places by the thousands of traveling Americans." So far as the provision for ice for regular use in hotels and kindred establishments is concerned, his theory is probably well founded. Americans do form a very important

section of the clientele of hotels, not only in London, but in almost every part of England and Scotland, during the summer nowadays. As a mere matter of business, hotel managers find it expedient to study their tastes and cater to their wants, and it is only natural that in hot weather British fellow-guests, seeing them insist on ice almost as a necessary of life, should follow their example in its use. But it is scarcely necessary to point out that the use of ice for refrigerating purposes was habitual in this country long before the American traveler became a familiar figure among us. And it may confidently be added that the ice habit, in the sense in which it exists among American people at home, is never likely to establish itself here.

Even if, as Mr. Halstead seems to think possible, the refrigerator comes to be regarded as a customary household utensil, it will not be used to anything like the same extent, or in the same way, as it is in the States. The main reason for this is a meteorological one; our summers are rarely either so hot, so long, or so trying as those which Americans have to endure at home, and, consequently, the very foundation is lacking for the establishment of an ice habit like that which has developed itself among them.

Besides, while far from coinciding with the dictum of Mr. Kipling's hero that it is necessary for a man to go "somewhere east of Suez" before he can "raise a thirst," we rather suspect the existence of a very general conviction among Britons that ice, however cooling and grateful at the moment, is not really an effectual thirst quencher at all, and that its effect on the internal economy is not beneficial. Disordered liver and defective digestion are very common ailments in the United States, and are frequently attributed by medical men there, as well as here, to the national passion for ice water.

It is true that this theory is treated with lofty contempt by Mark Twain. In his "Tramp Abroad" he declares that some ice-cold water which he drank from glacier streams in the Alps was the only really satisfying water he had tasted since he left home, "for at the hotels on the Continent they merely give you a tumbler of ice to soak your water in, and that only modifies its hotness, doesn't make it cold. "Water," he proceeds, "can only be made cold enough for summer comfort by being prepared in a refrigerator or a closed ice-pitcher. Europeans say ice water impairs digestion. How do they know?—they never drink any."

Whether this proposition be true or not, it does not really touch the question at issue, and though Mark Twain is one of the most

entertaining of easy-chair companions, he can scarcely claim acceptance as an authority on the subject of the effect of ice water on the digestion. So long as that matter remains undetermined, it may be doubted whether the ice habit will ever be thoroughly acclimated here.

MEDICAL EXCERPT.

By T. P. Corbally, A. M., M. D.

Military Hygiene.—In his inaugural address on Military Hygiene, in the Escuela Superior de Gueria of Buenos Ayres, published in full in the Anales de Sanidad Militar for June, 1900, Prof. Dr. Marcial V. Quiroga says that:

"It has been very justly claimed that health is indispensable in war, and there is nothing that can supply its place. And how can this possibly be obtained except by the careful observance of the principles of hygiene with the strictest observance of the rules that it prescribes in every moment of military life. What would become of our armies, advancing eagerly for victory and glory, if before the battle they had not prepared for triumph by increasing, as far as possible, their physical strength, their ability to resist the fatigues of war by the observance of the rules of military hygiene?

"The pages of history are filled with distressing pictures of disease of epidemics, that have decimated armies when they have not submitted to the rigid rules of hygiene in the camp, on their marches, in the garrisons, in campaigns, in defeat in triumph, in a word in every act of their lives." * * *

"The great military physicians and surgeons, as Percy, Larrey, Desgenettes and others who devoted their whole lives to the service of their country, accompanying their armies in all their great battles, after their long experience have declared that, next to discipline, hygiene is the quality most necessary for the preservation of an army."

The lecture refers to the wars of Napoleon, in which he led a generation of youths, boys from 17 to 18 years of age to death, who, as he said himself, fell like snow not by the fire of the enemy, but by the poisoned breath of epidemic diseases. He criticizes severely but no doubt justly the heavy losses in armies of the present day from improvidence, neglect, inexperience or worse, on the part of officials accompanying the army or serving them.

DENTISTS IN ARMY AND NAVY.—At a meeting of the Congrès Dentaire Internationale, among the reforms hoped for were—Les Progrès Médical (August 25)—one referring to the purely scientific progress of the subject, the other recommending the appointment of properly educated dentists in the army and navy as well as in the schools.

The "Journal d' Higiène" (August 23) contains an extract from an article in the "Tribune Médicale," expressing regret that the French army has no regimental dentist, that is, one who is a dentist by profession, and presumably understands his business.

It is all very well and very patriotic for a man to be a soldier, but like any simple citizen he may have the toothache; the microbe may find a lodgment in a military molar or incisor without fear of being treated as an intruder; the toothache is a disease that may occur every day in the regiment or on board a man-of-war, and every day the patient suffers.

There may be plenty of instruments in the arsenal of the regimental infirmary, but no one capable of using them.

Any one who has had toothache can sympathize with the soldier.

HÆMATURIA NERVASA.—M. Lancereaux presented to the Académie de Médecine ("Gazette Hebdomadaire," August 26) an interesting paper on this form of haematuria.

M. Lancereaux believes in the undoubted existence of hæmaturia of neuropathic origin, yielding generally to quinine and douches. It would be a grave error in these medical cases to have recourse to surgical interference. These hæmorrhages have been observed in individuals in whom the hæmorrhoidal flux had been suppressed in previous attacks, occurring in rheumatic patients; their origin is vesicular, and depends on a vaso-motor cause. Old people are predisposed to them.

"The causes of these attacks of hæmaturia," says M. Lancereaux, "do not differ from neurapathic hæmorrhages in general, in the sense that they follow violent emotions as anger, chills, etc., etc. More frequent in men than in women they occur at different periods in life, not always at an advanced age, and especially in hæmorrhagic subjects.

"These attacks are almost always preceded by severe pains in the lumbar and hypogastric regions. The urine is cloudy, brown or red, is sometimes colored with extravasated blood in greater or lesser quantities; this coloring disappears sometimes momentarily, and reappears sooner or later. The microscopical examination en-

ables us to detect some blood globules, variously changed. Heat and nitric acid usually give rise to a precipitate of albumen, which is often abundant.

"The course of neuropathic hæmaturia is exceedingly intermittent, sometimes it is periodical, the attacks varying in duration from a few days to weeks and even to many months.

"The seat, the exact location of this disease is more difficult to determine. The condition by which we can most correctly fix the seat of the hæmaturia is the pain which, if the kidneys be affected is found in the lumbar region and in the side, and not in the hypogastrium as when the seat of the disease is in the bladder. Besides there is in this latter case a frequent desire to urinate. Nevertheless a careful examination of the urinary organs as a whole, should always be made so as to give a feeling of security that there is no other disease to which it might be attributed.

"The prognosis, in cases of neuropathic hæmaturia is not serious. As to their treatment it consists in the employment of opiates, of astringents and especially of the sulphate of quinine. Administered in the dose of 80 centigrams to a gram and a half, this remedy will arrest almost always hæmaturias that are really neuropathic and most frequently in a few days.

"The douche is indicated when the hæmorrhage has ceased; they assist not only the nervous system, but they help to relieve the debility and the anæmia following a profuse loss of blood."

TREATMENT OF DIABETES MELLITUS.—Benson ("The Dietetic and Hygienic Gazette") records a typical case of diabetes mellitus in a railroad employee aged forty-eight years. The patient had been ailing for some time, and was under treatment for gastritis. For six months he had been failing in flesh and strength, and at the time when treatment was inaugurated was voiding about sixteen pints of urine, specific gravity 1,060 and containing a large quantity of sugar. Lithiated hydrangea was prescribed in teaspoonful doses every four hours and a diet restricted to gluten bread, fish, poultry, eggs, spinach, cabbage, string beans, milk and fish bouillon. As a result he improved rapidly. His urine gradually became practically normal in every particular. At the end of the third week of treatment only a trace of sugar was found. The patient returned to his work, but continued using only the anti-diabetic diet. Occasionally, when strongly tempted, he indulged in the ordinary dining car bill of fare, and always suffered the consequences. In such event he promptly returned to the

course of medical treatment prescribed and was always benefited. When the report was made he was as fleshy and strong as ever, but was still using only gluten bread and occasionally taking a short course of lithiated hydrangea.

ELIMINATION OF IODINE.—M. P. Bourget reported ("Progrès Médical, August 25) to the Académie des Sciences the results of experiments made by him in the laboratory of M. Gautier for the purpose of determining the way in which iodine is eliminated.

He found the iodine in small quantities not only in the blood but in nearly all the organs of the system. He has also determined satisfactorily that the hair is the principal agent for its elimination.

In women, who do not lose their hair as men do, the elimination is effected through the menstrual discharges. This result, very similar to that found by M. Gautier for the elimination of arsenic, completes the important discovery which has been announced to the International Medical Congress.

TREATMENT OF CANCEROUS CACHEXIA.—Lawrence ("The Medical Brief," April, 1900) gives as the best treatment for cancer and the cachexia attending it, teaspoonful doses of Ecthol four times daily in conjunction with alterative doses of iodide of arsenic. The latter should be administered in doses ranging from one-sixteenth to one-thirtieth of a grain three times a day, and continued for a long period. Ecthol contains the active principle of thuja, which is accorded specific value in cancer. The treatment outlined is aimed to cause absorption of the cancerous tissues.

ANEURISM.—M. Le Dentu read a report of a case by M. Gerard-Marchant, describing the treatment of aneurism of the trunk of the right brachis-cephalic by ligature of the primitive carotid and the axillary of the same side. ("Gazette Hebdomadaire," July 29).

The patient had previously been treated by M. Lancereaux according to his method, consisting mainly of gelatine injections; the result was without any effect. Then the surgical operation was tried. M. Gerard-Marchant would have ligated the subclavian instead of the axillary if it had not been found affected with the aneurismal swelling. The patient was cured.

M. Le Dentu thinks that medical treatment should not be too long continued.

The surgical treatment of aneurism by the method of Wardrop has not been successful enough to warrant its employment.

"VIN MARIÀNI" ("St. Louis Medical and Surgical Journal," May, 1899), is essentially the brain and nerve tonic of those who have talent and genius. These it is who compose the great army of intellectual workers, and the ravages made upon their nervous systems by the demands made upon them are at times truly appalling. This damage and consequent drain yield to nothing more quickly than to "Vin Mariani." The most noted European physicians, literateurs, musicians, singers, artists and diplomats have sent the most flattering letters to M. Mariani extolling his product. Not only these but crowned heads as well have been mentally invigorated and rejuvenated by "Vin Mariani" and never tire of speaking words in its praise. It must be acknowledged that unsolicited testimonials, couched in such glowing terms, from such sources, are the best evidence possible that can be offered for the merits of the preparation. When "Vin Mariani" becomes as well known in this country as it is in Europe, it will be adopted as one of the indispensable remedies in the household.

MOSQUITOES A CAUSE OF ELEPHANTIASIS.

The second malarial expedition of the Liverpool School of Tropical Medicine (London letter, Jour. A. M. A., Sept. 8) has telegraphed from Bonny, in Nigeria, an important discovery, viz., that the filaria which causes elephantiasis ,like the malarial organism, is found in the proboscis of the mosquito. The same discovery appears to have been made in England by Dr. Low, of the London School for Tropical Medicine, in mosquitoes brought from Australia.

TREATISE ON MOSQUITOES.

Washington, Aug. 24.—The Department of Agriculture is about to issue a bulletin prepared by Entomologist L. O. Howard on the mosquitoes of the United States. It discusses their structure and biology and indicates the difference in all stages of existence between the kinds of mosquitoes that transmit malaria and those that do not, and also discusses the subject of remedies.

About 250 species of mosquitoes are known, of which only about 30 have been found in the United States. The report says that the remedies in use in houses, the burning of pyrethum powder and the catching of mosquitoes on the walls in kerosene cups are probably the best, next to a thorough screening and mosquito bars about the bed. The remedies for bites mentioned are glycerine, a lump of indigo, and household ammonia.

EDITOR'S TABLE.

☞All correspondence and exchanges, and all publications for review, should be addressed to the Editor, Dr. A. N. Bell, 337 Clinton Street, Brooklyn, N. Y.

SANITARIAN, OCTOBER, 1900.

THE UNCERTAINTIES OF LIFE.

The overwhelming calamity at Galveston, August 8, 1900, may be chronicled as one of the extraordinary admonitions of the uncertainty of life everywhere.

The tropical storm that had been reported in the West Indies by the Weather Bureau the day before, when it reached the coast of Texas had developed into a terrible hurricane. Galveston, situated on a narrow island, only about six feet above the level of, and with no protection from, the sea, except by the jetties constructed for the purpose of securing a deep-water outlet to the gulf, encountered its worst effects. The hurricane was terrific in the extreme; the wind had reached a velocity of 84 miles an hour and piled up the waves before it. The whole island was speedily submerged; vessels at the wharves were wrecked; houses were swept down; thousands of lives were swallowed up, and property valued at many millions destroyed. Scribes are not wanting, however, who are not at all surprised at this calamity, which they readily account for and compare with some similar ones of their observation, as those on the South Carolina and Louisiana coasts, a few years ago, all of which they attribute to the shortsightedness or neglect of the settlers in such localities: localities constantly liable to tropical hurricanes and tidal waves, which they have taken no pains to avoid, or means to protect themselves against the known dangerous conditions. More knowledge of the conditions of human life under all circumstances would extend the scope of vision of such observers to the liabilities to disaster at greater altitudes: by mountain torrents and tornadoes, landslides and volcanoes; and would take in the liability to disaster by railway and steamship; by mine and factory explosions; by chemists, electricians and sanitarians, in the exercise of their pursuits; aye, even individuals at all times, no matter where or how occupied; or, it may be, during a mere stroll, as of the unfortunate individual on Broadway but a few days before the time of this writing, who was instantly killed by the fragment of a flagpole that snapped just as he passed under it.

Of like uncertainty is life at all ages and under all conditions, with relation to disease. Its duration varies according to numerous conditions: the original constitution of the individual, the habits and occupations of life, locality, and various other causes, some of which, cataclysmal or accidental—as those above described and referred to—are inappreciable before their fatal effects are encountered. Indeed, disease, in all of its aspects, is no less constant than the physical phenomena of the universe. The more attentively it is studied, from the earliest records of it to the present time, the more evident it appears that not a single one of the many well-defined diseases, described in ancient or modern times, including those now attributed to germs as the essential cause, has wholly disappeared. The same and all exist to-day that ever have existed, and with equal liability to assert themselves under the same conditions as their wont at any period in their history. The existence of disease germs is evidently coexistent with mankind, and between the two there is a constantly recurring antagonism of forces.

Disease forms no exception to the Divine arrangement of natural phenomena. The beginning and end of human life are only steps in an eternal existence. Death is the completion of life, but if disease had no other purpose nor end than death, it would be an anomaly in the works of the Creator, involving an arrangement of vitality without salutary tendencies. Like our own handiwork, which has in itself no provision for repair, we should wear out; labor and sorrow would be the end of all our days; life would be a burden, health beyond hope, and eternity a new creation. Besides, the uncertainty of the issue in any disease, however slight in the beginning, is evidence of its merciful object. Were it otherwise, were our bodies so constituted as never to be sick but unto death, how appalling and hopeless would be the condition of man—hardened in sin, by the deliberate postponement of immortal concerns on account of the certainty of time! But the uncertain duration of, and occasional recovery from, even the most fatal diseases, guards and secures their fitness for the common purpose, and prevents them from being any exception to the Divine arrangement.

Disease is nowhere manifest as mere punishment, but as a correction in mercy for the salvation of the soul. Even when it is brought about by our own misconduct, it is consonant with this view, because we are admonished by it to be ready for death.

The apparent punishment of Azariah with leprosy for profan-

ity, and of Gehazi for covetousness and falsehood, was in reality a correction in mercy. And in like manner were the punishments of the Israelites.

We are corrected against the imprudence committed for future improvement in *ourselves,* not punished that others may profit by our example, which is the true design of punishment. Moreover, as a general thing, there is no connection between acts performed and disease. Indeed, if this were the case, we should find that the righteous and the wicked could be designated by their relative degree of health, and we should be constantly led to inquire, "Who did sin, this man or his parents?"

It is conclusive that no manner of life can be alleged in justification of disease. From infancy to old age, the innocent and the guilty are alike subject to its uncertainties.

The inherent aversion of man to live for the future needs a constant monitor. For there is no condition in which we are in so much danger of forgetting that an eternity awaits us, as when we are in the uniform enjoyment of health. The purpose of disease may indeed be disregarded, unheeded; in which case the visitation will be unprofitable, as it was to the Philistines, but its purpose is not on this account altered. A thorough conviction of God's love and merciful providence in all His dispensations is the only adequate proof of a submissive spirit.

The benefit of disease is to be obtained by endeavoring to discover its nature, how it might have been avoided and how its recurrence may be prevented as long as possible, consistent with the human organism, and finally, by a meek submission to the Divine will.

AN EPIDEMIC OF "PINK EYE."

The New York Eye and Ear Infirmary has been overwhelmed with cases. On Tuesday, August 11, Dr. Cary, chief of the medical staff, reported for the week a maximum of 100 cases of "pink eye" in a total of 196 cases for the day.

The other dispensaries in the city have had a similar proportion of cases, and many at the hospitals. The disease has been attributed to the unclean public swimming baths about the city. Children have formed a great majority of the cases, but there have been many instances of whole families presenting themselves for treatment at the same time. These conditions are accounted for by the contagiousness of the disease, and the common means by which it is propagated in families and schools by the use of the same towels and other washing facilities.

The baths are reported by the Health Department to have been carefully inspected and, with but one exception which was promptly closed,, several weeks ago, in good sanitary condition. The prime source of the infection may have been that one—said to have been polluted by adjacent sewage outfall—but in the absence of other finding there seems to be quite sufficient in the crowds of bathers that have been allowed to follow each other so rapidly that the water has not time to change with the flowing tide between the detachments. The custom at the baths is to let a crowd equal to the full capacity of the dressing rooms remain in the water for twenty minutes, and then they are driven out and another squad immediately admitted.

THE UNSANITARY PIN.

EDITOR OF THE SANITARIAN: In the recent Spanish-American War it seems to have been proved conclusively, that the typhoid fever germ was spread by flies. Moreover, scientists have advanced the theory that malarial fevers are sometimes propagated by mosquitoes, which bring the germs from the swamps and marshes where they hatch out.

Following out these alleged means of propagating infectious diseases, has any one ever considered the harm that has been caused by the use of the ordinary pin?

Pins are a very useful and necessary article, but the manner in which they are used is not always entirely sanitary. For instance, a lady goes to her dressmaker to be fitted. She stands before the artiste and the mirror, and if the garment is too large, plaits are taken in here or there and fastened, temporarily, with pins usually held, for convenience, in the mouth of the modiste. Is the latter young and healthy, or old and diseased? Is her mouth sweet and clean, are her teeth and gums diseased?

The same pins are probably used to fasten up the parcel when it is sent home to the lady. The pins are then stuck into her pincushion, to be used again and again by herself or her family and, for convenience, often put or carried in their mouths. What disease germs are thus thoughtlessly conveyed from one person to another in this careless use of pins?

There are many other indelicate, even disgusting, uses made of pins. One often sees people picking their ears or teeth with them. They are frequently used for removing splinters from the hands, for picking pimples, puncturing blisters and for fastening bandages over sores or wounds.

These identical pins picked up anywhere are used for any purpose again and again, and who can estimate the harm that is done, who can trace what disease they may spread? Is it not safer then, not to pick up the stray pin—for it may be picking up some dangerous disease. When all are used up from a paper it would be better to buy a new one, or if old ones are used, first submerge them in a bath of carbolic acid over night.

WM. H. LAWTON.

Newport, R. I., August 2, 1900.

Apropos to the foregoing:

DEATH FROM A PIN SCRATCH.

Patrick E. Little Killed by an Apparently Trivial Wound.

The scratch of a pin accidentally inflicted by his baby son thirteen months ago caused the death of Patrick E. Little, manager of a trucking business at 93 Pearl street, in New York Hospital, Thursday night, August 16.

Blood poisoning set in soon after the injury, and for months the man had suffered great agony, which many physicians were unable to relieve more than temporarily. His condition, however, was not regarded as critical until nine days ago, when in a frenzy of pain he destroyed his bed clothing. He was removed to the hospital on Tuesday and was operated on by Dr. Markoe, who made a deep incision in the affected limb. He did not rally from the surgeon's knife.

Mr. Little was forty-nine years old, and married eight years ago. He lived with his wife and three children, whose ages range from fourteen months to six years, on the top floor of 616 Hudson street. On the day of the accident, the little boy of the family, then about thirty months old, started to run to his father. His little kilt became loosened and Mrs. Little tried to fasten it with a safety pin. The guard broke off as she did so, and as her infant was screaming with pain, she pinned the dress with the unprotected point and let the little one go.

The baby tried to climb up his father's leg, but had gone but a few inches when he slipped down, and the brass pin made a slight scratch on the leg. In two weeks an angry sore developed. Dr. Banta, Dr. Sherman, and other physicians were called in in turn. Several times the wound healed only to break out again worse than ever.

Little was a thoroughly healthy man before the accident, but

diabetes set in. At the hospital, however, it was said that the cause of death was the shock of the operation, which was more than he could bear in his enfeebled condition.

Standing by her husband's coffin yesterday, Mrs. Little berated herself for the moment's thoughtlessness that had brought such dire results, and said she would try to keep from the little child the knowledge of the part he had had in his father's end.

THE CULTIVATION OF SICKNESS.

The "Banner of Light," in a recent issue (Aug. 8), in an editorial on "Sanitation," deservedly characterizes the perfunctory methods of timid sanitary inspectors under the auspices of restrictive medical laws lest, in ordinary times, they offend the sensibilities of the people.

Not wishing to lose their official positions, they ofttimes quietly shut their eyes to conditions that ought to be removed for the good of the individuals involved, as well as of the community at large. If an epidemic appears suddenly, they may have a spasm of reform pass over them, only to relapse into their former innocuous activity.

If men and women would conserve health conditions, they must engage in educational work on all occasions. Boards of health will shut their eyes to the nuisances of piggeries, slaughter-houses and the like so long as the people fail to interest themselves in the work of reform. Typhoid fever and other decimating diseases will flourish so long as the atmosphere and drinking water of communities are polluted by carrion and generated poisons. The scourge of New England, consumption, will continue to slay its thousands so long as men and women submit to tyrannical attempts to legislate it out of their blood. Consumption may be hereditary, but we venture to assert that there would be fewer cases by far if New England homes were properly ventilated, and outdoor and indoor cleanliness were insisted upon at all seasons of the year.

In farming communities, there is no excuse for breathing vitiated air, nor is there any valid reason why slops, table refuse, sour milk, etc., should be thrown out beside the kitchen and dining-room doors to attract the flies whose very presence indicates that something is wrong with the atmosphere. Hens are permitted to wander at will over the lawn, while heaps of rubbish, and decaying vegetables are left to contribute their full quotas to the work of breeding disease.

If boards of health would really serve the people they should set to work to secure the removal of all offal, garbage, and other disease-producing causes from the premises of every citizen. Each householder, be he a farmer or a mechanic, should be taught that health can best be sustained by the application of the law of cleanliness, rather than that of medical monopoly. It costs no more to keep the pigs and hens in their proper places than it does to permit them to roam at will over the farm. It is far more to one's credit, and adds not a little to the value of his possessions, to keep all refuse out of sight, and to see that the same is effectively destroyed. The doctors would do far more for humanity if they were to cease their efforts to compel people to support them, and devote themselves to the work of urging the gospel of cleanliness upon the communities where they reside. People need more education in sanitation and less drugs—more real liberty of enlightenment and less dependence upon the dictum of those who assume to be the arbiters of human destiny.

VEGETARIAN COLONY.

The vegetarians (The Chicago "Times-Herald") have about made up their minds that life will not be worth living if they must live it among people who eat frogs' legs, lobsters, wienerwursts, canned corned beef, cold turkey, and tripe. To the vegetarian—the consistent, constitutional vegetarian—an ordinary menu is a loathsome thing, and a man eating ox-tail soup or even a maiden fair who takes the leg of the chicken in her fingers and gnaws at it is disgusting. Hence they have resolved to go it alone for the benefit of the human race. The Rev. H. S. Clubb, of Philadelphia, President of the Vegetarian Society of America, is reported to be at Chattanooga, Tenn., in the interest of the society, with a view to a settlement where the vegetarians may colonize and establish regulations that will conform to their tastes and practices.

The members of the society are scattered all over the United States, and during the last four years, so President Clubb states, there has been a growing spirit among the greater part of its members to separate themselves more distinctly from the rest of society. It is with this spirit that his journey has been made to the South. What he wants is a place where all kinds of fruits and vegetables can be grown on an extensive scale. This being found the scheme is to colonize the vegetarians and to engage in extensive fruit-farming for the Northern markets. Along with this the indus-

try of making and selling peanut butter as a substitute for cream cheese, and various other preparations, the results, more or less, of business speculations under the pretence of promoting health. But from what we know of their devices and products, we are prepared to hear, after their scheme is well under way, that some of these pioneer "health food" sanitarians, now wrapped in their "sanitary" cloaks, are getting rich; that while they are participating in meals composed of an abundance of kale, lettuce, turnips, celery, potatoes, cracked wheat, nuttose, peanut butter, etc., their mills are grinding food 16 to 1 of a totally different sort upon which they are fattening while their dupes are growing lean.

CHEMICAL FOODS IN GERMANY.

Consul Hughes writes from Coburg, May 17, 1900 (C. R. 240):

In opposition to the determined vegetarians who condemn all animal food, there is a growing number of physiologists who insist that abstention from meat, if continued for ages and generations, is responsible for the feebleness and low intellect of certain races. Chemists are becoming more and more anxious to find new sources of nitrogenous foods, and the artificial-food industry has developed widely in Germany, chiefly in the large works which supply dyestuffs, for which albumen is an important material.

The artificial foods are mostly mixtures of more or less secret composition. Thus, the tropon of Professor Finkler, of Bonn, whose works are at Mühlheim, consists of one-third of animal and two-thirds of vegetable albumen. Albumenose is a frequent constituent of those foods. By albumenose is understood a preparation which, as regards solubility, occupies a position intermediate between the original animal albumen and its peptone.

The managers of the Elberfeld Farbenwerke have made a hit with their somatose, which is such an albumenose, and have quite recently brought out the more economical tannin and milk somatose, which may become a very important food for the masses. This latter preparation utilizes the casein of the milk.

The nutrose of the dye works at Höchst, the eukasin of Salkowsky, the sanatogen of Bauer & Co., of Berlin, contain all the casein compounds with sodium or ammonium.

CLEAN BREAD.

A "bread factory," we hear, is being erected in Milwaukee, which is to have some novel, but very desirable, sanitary features.

All the ingredients are to be tested in a laboratory before being used. The bakers will work in full view of the public, at long tables stationed in front of wide plate glass windows. Each man will be required to wear a special suit of clothes provided by the management, and to take at least one bath a day in the bathroom that is connected with the lockers on the upper floor. Moreover, he may not smoke, chew, or drink and be a worker in the bread factory. This sanitation is to extend even beyond the limits of the factory, for every loaf of bread on being taken from the oven will be wrapped in a sheet of waxed paper and so sent out to the market. The grocery boy may handle it, but the customer who buys it may eat of it in perfect serenity of mind, knowing that it has not come into contact with his grimy hands or been piled up on dirty counters. The capacity of the factory is to be 30,000 loaves of bread daily.

CHEESE OF PASTEURIZED MILK IN SWEDEN.

Consul Nelson writes from Bergen, May 30, 1900 (C. R. 240): Cheese of pasteurized milk has until lately been considered almost impossible to produce and dairymen have been at a loss how to use the churn milk, which has been sold as feed for pigs or thrown away. A short time ago, a chemist at Stockholm—Dr. Frans Elander—succeeded in effecting a preparation that solved the above-mentioned difficulties. Owing to this discovery, which has been named "caseol," palatable and nourishing cheese, free of tubercular bacilli, can now be made from pasteurized skim milk. This preparation has, moreover, the excellent quality of rendering cheese more digestible. Several dairies in London have made experiments with caseol, with the same favorable result. I will gladly procure samples of caseol for any of our dairymen who may desire to make trials with it.

SANITATION AND LIFE INSURANCE.

Dr. R. B. Leach, of St. Paul, makes a suggestion (Minneapolis "Journal") with regard to the importance of maintaining good sanitary conditions in cities which is suggestive and interesting. His point is that the time is not far distant when life insurance companies will fix rates for life insurance with some reference to local sanitary conditions, just as fire insurance companies make rates with reference to local safeguards against fire.

This, of course, is in addition to the conditions which life insur-

ance companies now impose with reference to extra-hazard by travel; by residence in countries subject to special diseases, as, for instance, the fevers incident to the tropics. But even in case of residence in any part of the United States the rating of life insurance with reference to the local sanitary conditions under which the insured lives is certainly a sensible idea. Why not?

And when it is done it will have a very decided effect upon all municipal arrangements for the care of garbage and protection of the water supply, the cleaning of streets and alleys, the kind of pavement used, the construction of the school houses and other public buildings, the inspection of food as to its soundness, the prevention of the use of adulterants, and everything else affecting health conditions which might properly be brought under public supervision. When life insurance companies take these things into account and give to residents of some communities lower insurance rates than they do to others, there will be a better understanding and a keener appreciation of the importance of intelligent and efficient sanitary regulations. The residents of cities to-day live under very much better conditions than the residents of cities fifty or one hundred years ago. And so much better are the conditions of life generally, both with respect to better sanitation, better water supply and better ventilation, that human life has been extended and men live longer on the average than they used to. Human life is, after all, the most valuable asset in any community. And yet we spend in the average American city a good deal more for protection against fire than we spend for protection against disease.

Minneapolis is about to adopt a new method, at least one not in vogue here for some time, of disposing of garbage and other unwholesome accumulations not otherwise provided for. It has taken a good deal of agitation and discussion to secure for this purpose the small amount of money necessary to build a small crematory to make the start. Whether this is absolutely the best method for the disposal of garbage it is not necessary to consider in this connection. If it shall prove to be a reasonably economical and satisfactory method it ought not to be difficult to set aside sufficient money to develop this system to the fullest extent required by the best possible sanitary conditions. And even then we shall probably be paying much less money for the protection of life from disease than we are spending for the protection of property from fire.

THE DUST PROBLEM AND ASPHALT PAVING.

Judging from the following remarks in the "Medical Press" regarding pavements (Boston "Medical and Surgical Journal" Sept. 6), the problem is a vital one in Great Britain as well as in America: "Although in this country we are accustomed to hear much of the drawbacks attending the employment of asphalt for paving our roadways it cannot be seriously contested that it offers many and serious advantages. First and foremost there is a comparative freedom from dust, and dust we know is one of the most potent agents in the dissemination of certain diseases. Then, again, it can be readily cleansed by the aid of water without giving rise to dust, and without the substitution of foul mud, which once again became reconverted into dust after a brief period. Lastly, there is a reduction in the noise, asphalt-paved streets being quiet compared with the growl of vehicles passing over macadam and the roar over granite blocks. We are assured, too—though this is hardly within the scope of our remarks—that it is more economical and effects a great saving in the wear and tear of vehicles. From a medical point of view its great and incontestable advantages lie in its freedom from dust and ease of cleansing. Wood paving, if even more noiseless, is more costly, wears out more quickly, and hardly admits of local repair, it generates a highly irritating and dangerous dust, and in hot weather gives out a very disagreeable odor, recalling that of an ill-kept stable. With the advent of the motor car the objection raised to asphalt on the ground of the insecure foothold for horses which it affords under special atmospheric conditions will cease to have much weight."

THE HYGIENE OF HIGH ALTITUDES.

It is well known (Boston "Medical and Surgical Journal," from "Lancet") that the chemical composition of the atmosphere differs but little, if at all, wherever the sample be taken; whether it be on the high Alps or at the surface of the sea, the relation of oxygen to nitrogen and other constituents is the same. The favorable effects, therefore, of a change of air are not to be explained by any difference in the proportion of its gaseous constituents. One important difference, however, is the bacteriological one. The air of high altitudes contains no microbes and is, in fact, sterile, whilst near the ground and some one hundred feet above it microbes are abundant. In the air of towns and crowded places not only does the microbe impurities increase, but other impurities, such as the

products of combustion of coal, accrue also. Several investigators have found traces of hydrogen and certain hydrocarbons in the air, and especially in the air of pine, oak and birch forests. It is to these bodies, doubtless consisting of traces of essential oils, to which the curative effects of certain health resorts are ascribed. Thus the locality of a fir forest is said to give relief in diseases of the respiratory tract. But all the same these traces of essential oils and aromatic products must be counted, strictly speaking, as impurities since they are not apparently necessary constituents of the air. As recent analyses have shown, these bodies tend to disappear in the air as a higher altitude is reached until they disappear altogether. It would seem, therefore, that microbes, hydrocarbons, and entities other than oxygen and nitrogen, and perhaps we should add argon, are only incidental to the neighborhood of human industry, animal life, damp and vegetation.

ANTIALCOHOL SERUM IN FRANCE.

Consul Atwell writes from Roubaix, May 31, 1900 (C. R. 240):

In December last, Drs. Sapelier, Thébault, and Croca advised the French Academy of Medicine of their discovery of an antialcohol serum.

These gentlemen stated that their experiments proved that a horse fed for a certain time on doses of alcohol and food mixed with alcohol furnished a serum antiethyline which, injected into victims of the alcohol habit, gave them an absolute distaste for the liquor.

Dr. Sapelier, of Nauterre, sent a second communication on May 22 in his own name and that of his collaborators to the Academy of Medicine, stating his method and the results obtained. He cited fifty-seven cases of drunkards treated by antiethyline. Seventeen cases were failures, four resulting from irregularity in following the treatment and thirteen from physical defects considered as unfavorable conditions. There were eight cases of improvement, four notwithstanding irregularity in following treatment, and four despite defects limiting the action of the serum. Thirty-two cases were successful. The result is then as follows: Failures, 25 per cent.; improved condition, 15 per cent.; successful, 60 per cent.

It has been said that the success obtained by the injection of antialcohol serum is due or partially due to imagination or autosuggestion. Dr. Sapelier refutes this assertion by stating that among the patients cured a certain number were quite ignorant of the reason and nature of the treatment, and that the hysterical

and impressionable patients figure among the failures, or those who merely improved in condition.

Drs. Sapelier, Thébaut, and Broca have deduced an ingenious theory from their method. They say that the action of antialcohol serum awakens reflex acts, which as a whole constituted originally the instinctive distaste of man for alcohol, thus re-establishing a natural habit in place of an induced habit.

Antiethyline thus restores a man to his normal state. Drs. Sapelier, Thébaut, and Broca consider that the serum may be regarded as a potent agent against alcoholism.

PARIS EXPOSITION PRIZES—DEPARTMENT OF HYGIENE AWARDS REPORTED.

The Michigan State Board of Health—A grand prize and gold medal.

Boston Board of Health—A grand prize.

Massachusetts State Board of Health, and Cambridge Board of Health, gold medals; while Worcester's board gets a silver medal, as do the Bath Departments of Boston and Brookline boards of health. A gold medal is also awarded to Dr. Samuel W. Abbott, secretary of the State Board of Health, presumably in recognition of his service in collecting and arranging the exhibits of this department. It was good work well done.

A GOOD FEE.

Dr. J. N. McCormack, Bowling Green, Ky., has been awarded the very handsome fee of $10,000 for professional services rendered the late William Goebel, the murdered Governor-elect, of Kentucky. Governor Goebel and Dr. McCormack had long been close friends and when the Governor was shot Dr. McCormack, who happened to be in Frankfort at the time, was one of the first physicians to go to his assistance. The wound was mortal, but believing that if life could be prolonged a few days the Legislature would decide the contest, and that in the state of feeling resulting from the assassination Goebel would probably be declared Governor, Dr. McCormack took every step known to science to maintain life. Dr. McCormack refused to render any account for his services on the ground of personal friendship. But the brother of the deceased, a devisee under the will and executor of the estate, suggested the award of a fee to the amount named, which was agreed to by the family. Dr. McCormack is well known to the

profession and to the readers of THE SANITARIAN (as one of its collaborators), as Secretary of the Kentucky State Board of Health, and for his leadership in the fight against quackery in the State.

THE KENTUCKY DECISION ON OSTEOPATHY.

The decision of the Court of Appeals of Kentucky, in Nelson vs. State Board of Health, is very largely one of statutory construction. First, the statute regulating the practice of medicine in that State requires the State Board of Health to issue a certificate to any reputable physician having a diploma from a reputable medical college, without any discrimination against any peculiar school or system of medicine. The term "physician," as used therein, the court holds, refers to those exercising the calling of treating the sick by medical agencies, as commonly practiced throughout the State at the time the act was passed. The term "medical college" refers to those schools of learning teaching medicine in its different branches, at which physicians at that time were educated, or schools of that character organized since. At such an institution an essential part of the instruction was in teaching the nature and effects of medicines, how to compound and administer them, and for what maladies they were to be used. Surgery was also an essential part of the instruction. But osteopathy teaches neither therapeutics, materia medica, nor surgery. Bacteriology is also ignored by it. Hence, the court holds that a school of osteopathy which teaches neither of these branches cannot be regarded as a reputable medical college, within the meaning of the statute. The title of this act is, "An act to protect citizens of this commonwealth from empiricism." The act, the court therefore holds is "an act to protect the people of this commonwealth from the practice of medicine founded on mere experience, without the aid of science, or a knowledge of principles." And as the board is only authorized to issue a certificate to a reputable physician having a diploma from a reputable medical college, and no discrimination is allowed against any peculiar school or system of medicine, the court holds that the penalties provided by the last section of the act must be limited to that which is referred to in the title and previous sections—the practice of medicine in some of its branches in this State (Kentucky); and the words, "who shall practice medicine or attemp to treat any sick or afflicted person by any system or method whatsoever, for reward or compensation, without

first complying with the provisions of this law," must be held to refer to physicians or surgeons belonging to some school or system of medicine practicing or desiring to practice medicine in Kentucky, as provided in the preceding section. In other words, taking the statute as a whole, the court does not think that it was designed to do more than regulate the practice of medicine by physicians and surgeons, while an osteopath, it holds, is in no proper sense a physician or surgeon, and does not practice medicine. He is rather, it holds, on the plane of a trained nurse. Services in kneading and manipulating the body, it says, are no more the practice of medicine than services in bathing a patient to allay his fever or the inflammation of a wound. And if by kneading and manipulating the body of the patient he can give relief from suffering, it sees no reasons why he should not be paid for his labor as other laborers. So it holds that so long as he confines himself to osteopathy, kneading and manipulating the body, without the use of medicine or surgical appliances, he violates no law, in Kentucky, and the State Board of Health should not molest him. But, it at the same time declares, he may not prescribe or administer medicine or perform surgery.

MORTALITY AND MORBILITY REPORTS AND REVIEWS.

STATE OF NEW YORK: The sanitary districts into which the State is divided are as follows: *Maritime District,* includes New York, Brooklyn, Long Island, Staten Island and Westchester County; *Hudson Valley District,* all the counties on either side of the Hudson River, except Westchester, to and including Albany and Rensselaer; *Adirondack and Northern District,* the northern section of the State, the counties of Washington, Warren, Hamilton, Essex, Clinton, Franklin, St. Lawrence, Jefferson and Lewis; *Mohawk Valley District,* Schenectady, Schoharie, Saratoga, Montgomery, Fulton, Herkimer and Oneida Counties; *Southern Tier District,* the seven counties along the southern border of the State; *East Central District,* Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga and Cortland Counties; *West Central District,* Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee and Wyoming Counties; *Lake Ontario and Western District,* Oswego, Wayne, Monroe, Orleans, Niagara and Erie Counties.

The State Board of Health Bulletin for July, 1900, reports the number of deaths for the month to be 11,641—2,197 more than the preceding month, the death rate having increased from 17.5 to 19.5.

Maritime District, 3,935,000: Total deaths, 7,441; death rate, 22.3; deaths under five years, 3,630; from zymotic diseases, per 1,000 from all causes, 253; from cerebro-spinal meningitis, 38; typhoid fever, 55; malarial diseases, 12; scarlet fever, 28; measles, 68; erysipelas, 15; whooping cough, 60; croup and diphtheria, 147; diarrhœal diseases, 1,459; acute lung diseases, 526; consumption, 710; cancer, 202.

City of New York, 3,654,394: Total deaths, 6,973; death rate, 22.4; deaths under five years, 3,433; from cerebro-spinal meningitis, 37; typhoid fever, 52; scarlet fever, 28; malarial diseases, 12; measles, 66; erysipelas, 15; whooping cough, 55; croup and diphtheria, 140; diarrhœal diseases, 1,348; acute lung diseases, 504; consumption, 504; cancer, 186.

Borough of Manhattan, 2,007,241: Total deaths, 3,644; death rate, 21.3; deaths under five years, 1,756; from cerebro-spinal meningitis, 25; typhoid fever, 28; malarial diseases, 6; scarlet fever, 15; measles, 18; erysipelas, 7; whooping cough, 30; croup and diphtheria, 66; diarrhœal diseases, 574; acute lung diseases, 324; consumption, 347; cancer, 106.

Borough of the Bronx, 174,370: Total deaths, 398; death rate, 25.7; deaths under five years, 190; from cerebro-spinal meningitis, 4; typhoid fever, 2; malarial diseases, 3; scarlet fever, 2; measles, 9; erysipelas, 1; whooping couph, 1; croup and diphtheria, 16; diarrhœal diseases, 72; acute lung diseases, 12; consumption, 76; cancer, 13.

Borough of Brooklyn, 1,267,258: Total deaths, 2,413; death rate, 22.5; deaths under five years, 1,226; from cerebro-spinal meningitis, 5; typhoid fever, 16; malarial diseases, 2; scarlet fever, 5; measles, 32; whooping cough, 20; erysipelas, 6; croup and diphtheria, 43; diarrhœal diseases, 571; acute lung diseases, 134; consumption, 217; cancer, 56.

Borough of Queens, 136,559: Total deaths, 356; death rate, 30.8; deaths under five years, 182; from cerebro-spinal meningitis, 3; typhoid fever, 5; malarial diseases, 1; scarlet fever, 6; measles, 7; whooping cough, 3; croup and diphtheria, 6; diarrhœal diseases, 100; acute lung diseases, 23; consumption, 21; cancer, 8.

Borough of Richmond, 60,266: Total deaths, 162; death rate, 27.5; deaths under five years, 79; from typhoid fever, 1; erysipelas, 1; whooping cough, 1; croup and diphtheria, 9; diarrhœal diseases, 31; acute lung diseases, 11; consumption, 12; cancer, 3.

Hudson Valley District, 700,000: Total deaths, 1,048; death rate, 17.8; deaths under five years, 297; from cerebro-spinal men-

ingitis, 2; typhoid fever, 13; malarial diseases, 2; scarlet fever, 2; measles, 1; erysipelas, 2; whooping cough, 16; croup and diphtheria, 18; diarrhœal diseases, 181; acute lung diseases, 55; consumption, 118; cancer, 45.

Albany, 100,000: Total deaths, 162; death rate, 19.0; deaths under five years, 48; from typhoid fever, 3; croup and diphtheria, 6; diarrhœal diseases, 27; acute lung diseases, 12; consumption, 23; cancer, 7.

Adirondack and Northern District, 390,000: Total deaths, 426; death rate, 13.0; deaths under five years, 81; from cerebro-spinal meningitis, 4; typhoid fever, 6; malarial diseases, 1; scarlet fever, 3; measles, 5; erysipelas, 1; whooping cough, 2; croup and diphtheria, 5; diarrhœal diseases, 37; acute lung diseases, 25; consumption, 42; cancer, 23.

Mohawk Valley District, 395,000: Total deaths, 505; death rate, 15.1; deaths under five years, 131; from cerebro-spinal meningitis, 3; typhoid fever, 4; measles, 7; erysipelas, 1; whooping cough, 7; croup and diphtheria, 8; diarrhœal diseases, 67; acute lung diseases, 22; consumption, 40; cancer, 34.

Utica, 55,000: Total deaths, 103; death rate, 22.0; deaths under five years, 54; from typhoid fever, 1; measles, 6; whooping cough, 5; croup and diphtheria, 4; diarrhœal diseases, 29; acute lung diseases, 8; consumption, 6; cancer, 5.

Southern Tier District, 425,000: Total deaths, 391; death rate, 11.0; deaths under five years, 76; from cerebro-spinal meningitis, 1; typhoid fever, 5; malarial diseases, 1; scarlet fever, 2; measles, 5; whooping cough, 4; croup and diphtheria, 7; diarrhœal diseases, 27; acute lung diseases, 17; consumption, 37; cancer, 29.

Binghampton, 45,000: Total deaths, 72; deaths under five years, 20; from cerebro-spinal meningitis, 1; measles, 2; diphtheria, 1; diarrhœal diseases, 12; acute lung diseases, 3; consumption, 3; cancer, 3.

Elmira, 40,000: Total deaths, 34; deaths under five years, 6; from typhoid fever, 1; diarrhœal diseases, 3; acute lung diseases, consumption, 4; cancer, 3.

East Central District, 415,000: Total deaths, 465; death rate, 19.1; deaths under five years, 94; from cerebro-spinal meningitis, 2; typhoid fever, 4; scarlet fever, 1; measles, 4; whooping cough, 5; croup and diphtheria, 4; diarrhœal diseases, 48; acute lung diseases, 28; consumption, 36; cancer, 31.

Syracuse, 120,000: Total deaths, 156; death rate, 15.7; deaths under five years, 42; from typhoid fever, 1; measles, 2; diarrhœal

diseases, 25; acute lung diseases, 10; consumption, 10, cancer, 7.

West Central District, 325,000: Total deaths, 306; death rate, 11.1; deaths under five years, 39; from typhoid fever, 4; scarlet fever, 2; measles, 1; erysipelas, 1; whooping cough, 3; diphtheria, 3; diarrhœal diseases, 12; acute lung diseases, 15; consumption, 24; cancer, 44.

Lake Ontario and Western District, 890,000: Total deaths, 1,059; death rate, 14.0; deaths under five years, 380; from cerebro-spinal meningitis, 3; typhoid fever, 10; malarial diseases, 1; small-pox, 1; scarlet fever, 5; measles, 1; srysipelas, 2; whooping cough, 16; diphtheria and croup, 16; diarrhœal diseases, 251; acute lung diseases, 38; consumption, 95; cancer, 44.

Buffalo, 370,000: Total deaths, 458; death rate, 15.6; deaths under five years, 201; from cerebro-spinal meningitis, 3; typhoid fever, 5; scarlet fever, 3; measles, 1; erysipelas, 1; whooping cough, 9; diphtheria, 6; diarrhœal diseases, 150; acute lung diseases, 10; consumption, 32; cancer, 24.

Rochester, 180,000: Total deaths, 201; death rate, 13.2; deaths under five years, 66; from typhoid fever, 1; scarlet fever, 1; whooping cough, 1; diphtheria, 2; diarrhœal diseases, 42; acute lung diseases, 10; consumption, 23; cancer, 9.

Summary.

July, usually the month of largest mortality in the year by reason of the diarrhœal deaths, has been exceeded this year by that of March (the grippe epidemic) when 13,033 deaths occurred, and April, with 12,486, the deaths of this month being 11,614, which is below the average (11,900) of the past ten years. In 1892 there were 13,552 deaths in July; last July, 11,291. The death rate is 19.5 against an average of 22.0 for July. There were 40.6 per cent. of deaths under five years, the average being 46.0 per cent. *Diarrhœal deaths* have increased from 477 in June to 2,075. The average for the past ten years for July is 2,863, being 24 per cent. of the total mortality, against 18 per cent. this month. The largest relative mortality from this cause was in the Lake Ontario and Western district, 23.6 per cent.; in the Maritime, 19.6; while in the West Central and Southern Tier districts only 5.4 per cent. of the deaths were diarrhœal. In the three largest cities 22 per cent. of the deaths were from acute diarrhœal diseases, 40 deaths per 100,000 population; of 1,820 deaths in rural towns, 8 per cent. were diarrhœal, 8 deaths per 100,000 population. The increase from June in both localities is about the same, though commonly much

the largest in the cities in July, the rural mortality from diarrhœa falling on August. Other diseases of the digestive system have a much increased mortality. *Whooping cough* increased 71 deaths in June, to 113, the increase being generally distributed in all parts of the State. Typhoid fever has moderately increased; scarlet fever, measles, erysipelas and malarial diseases have diminished. The State is free from small-pox. There were 856 deaths from *accident and violence*, 5 occurring from *lightning stroke*, all in rural localities; 152 deaths were caused by sunstroke in New York City, and 14 in Hudson Valley towns on the 17th and 18th of the month.

CALIFORNIA.—San Francisco. Official report delayed.—To resolve doubts with regard to the existence of bubonic plague in the city, cultures were sent to Dr. Harris, the Johns Hopkins bacteriologist, from California, but as he was away for the summer, he directed that they be sent to Dr. Hibbert W. Hill, doctor and bacteriologist of the Boston Board of Health. The cultures were taken from a Chinaman who was supposed to have the bubonic plague. Dr. Hill developed these cultures on agaric jelly, and in broth, and inoculated a white rat. The rat died at the end of three days. After the rat's death the bacilli were recovered from the tissues and the results obtained were typical of bubonic plague. Dr. Hill has forwarded to the University of California his opinion that the bacilli are those of the bubonic plague.

Los Angeles, 103,000: Report for the month of July: Total deaths, 166; death rate, 19.3; deaths under five years, 41; from cerebro-spinal meningitis, 3; typhoid fever, 5; measles, 3; whooping cough, 5; diphtheria, 2; acute lung diseases, 9; consumption, 22; cancer, 10.

COLORADO.—Denver, 175,000. Report for July: Total deaths, 197; death rate, 13.4; deaths under five years, 43; from cerebro-spinal meningitis, 1; typhoid fever, 3; diphtheria, 1; scarlet fever, 1; whooping cough, 1; acute lung diseases, 6; consumption, 45; cancer, 7.

Remarkable Statistics.

August 25, the State Board of Health gave out mortality statistics for the first seven months of the current year, as follows:

January, 362 males, 278 females; February, 323 males, 249 females; March, 418 males, 256 females; April, 315 males, 189 females; May, 314 males, 233 females; June, 375 males, 228 females; July, 257 males, 164 females.

The Denver "Republican" of August 26, analyzes and compares this report with the statistics of the State Superintendent of Public Instruction, which show that though there are many more females than males born in this State, there are two deaths of males to every death of a female. In every graduating class there are more females than males, the ratio in the totals being six females to one male.

In every one of these months, as reported by the State Board of Health, it will be observed that the deaths of males have largely exceeded the deaths of females. Compared with the fact that the rising generation is composed of more females than males, as is shown by certain extracts from the school census, these figures are really alarming. In this county alone the school children, classed by law between 6 and 21 years of age, number 19,515 females and 18,854 males. The State Superintendent of Public Instruction declares that many more females than males are taking the full course of the schools and are graduating. The logical deduction is that soon there will be an educated class of women and a menial class of men, and that later there will be more women than men in the State, in the ratio of, at least, 16 to 1, without the aid or consent of any other nation on earth.

CONNECTICUT.—The State Board of Health Bulletin reports for July: Total deaths, 1,583 in 167 towns, with an aggregate population of 911,579. This is 462 more than in June, and 214 more than in July of last year, and 235 more than the average number of deaths in July for the five years preceding. The death rates were 21.7 for the large towns, 18.7 for the small towns, and 20.8 for the State. There were 638 deaths under five years of age. From cerebro-spinal meningitis there were 5 deaths; typhoid fever, 13; malarial diseases, 17; measles, 7; erysipelas, 2; whooping cough, 16; diphtheria and croup, 12; diarrhœal diseases, 446; acute lung diseases, 50; consumption, 130.

DISTRICT OF COLUMBIA.—294,674—89,288 colored. Report for the four weeks ending August 25: Total deaths, 488; death rate, 21.4; deaths under five years, 176; from diphtheria, 3; typhoid fever, 36; diarrhœal diseases, 63; acute lung diseases, 21; consumption, 63; cancer, 16.

ILLINOIS.—Chicago, 1,750,000. Report for July: Total deaths, 2,069; death rate, 14.3; from diphtheria, 41; measles, 14; scarlet

fever, 10; typhoid fever, 26; whooping cough, 33; diarrhœal diseases, 232; acute lung diseases, 136; consumption, 237; cancer, 69.

The Illinois State Board of Health has issued its advance sheets of the sanitary investigations of the Illinois River and its tributaries, made before and after the opening of the Chicago Drainage Canal.

The report shows that the water of the river is not polluted by the drainage; that the amount of organic matter decreases rapidly below Bridgeport, and that the Illinois River at its mouth has less organic matter than most of its tributaries.

This is considered by the State Board as conclusive proof that the Mississippi is not polluted, and that St. Louis water has not suffered in the least because of the Chicago canal.

LOUISIANA.—New Orleans, 300,000—90,000 colored. Report for July: Total deaths, 561--238 colored; death rates, white, 18.4; colored, 31.7; total, 22.4; under five years of age, 168—62 colored; from typhoid fever, 12; malarial fevers, 16; scarlet fever, 1; diphtheria, 3; diarrhœal diseases, 38; acute lung diseases, 26; consumption, 63; cancer, 19.

MAINE.—Registration Report, 1898. This report gives the results obtained in the registration and tabulation of the births, marriages, divorces, and deaths which occurred in the State of Maine during the year 1898. In justification of the late date at which the report is given to the public, it may be said that under the present conditions it was wholly impracticable to make an earlier presentation of the results which should, at the same time, be accurate and of value.

Population (census 1890) 661,086. The number of births registered in the year 1898 is 21 smaller than in the preceding year. The number of births recorded in each of the registration years, 1892-98, is 14,028, 14,604, 14,607, 15,430, 15,429, 15,142 and 15,121, respectively.

The number of marriages (number of couples married) in 1898 was 5,144, a number 187 smaller than in the preceding year. The number of marriages registered in the State in each of the years, 1892-98, is, respectively, 5,726, 5,795, 5,594, 5,729, 5,579, 5,331 and 5,144.

Of divorces, 764 were decreed in the year 1898 (552 in 1892, 627 in 1893, 674 in 1894, 681 in 1895, 688 in 1896, and 722 in

1897). In 1898 there were decreed in Maine, one divorce for every 6.7 marriages solemnized.

The number of deaths recorded in the State for the same year was 10,956, a number 280 smaller than that of the deaths registered in the preceding year. The number of deaths in each year thus far recorded is: in 1892, 12,147; in 1893, 11,134; in 1894, 11,012; in 1895, 10,464; in 1896, 10,626; in 1897, 11,236, and in 1898, 10,956.

Compared with 1897, among the chief causes of death, there were in 1898, 19 more deaths from measles, 5 more from scarlet fever, 7 more from cerebro-spinal meningitis, 65 more from typhoid fever, 141 more from infantile diarrhea, or 188 from the diarrheal diseases collectively, 68 more from cancer, and 70 more from diseases of the heart. On the other hand, there was a smaller number of deaths from the following causes: from influenza, 149 fewer; from whooping-cough, 2; from diphtheria and croup, 36; from pulmonary tuberculosis, 107; from diseases of the nervous system, 54; from pneumonia, 167, and from bronchitis, 27 fewer deaths than in 1897.

A noteworthy and uninterrupted diminution of the number of deaths from pulmonary tuberculosis, or consumption, has been going on in this State ever since the registration of vital statistics was begun. The number of deaths from consumption for each of the registration years, 1892-98, has been 1,352, 1,299, 1,262, 1,195, 1,172, 1,128, and 1,021, respectively. The lessening of the number of deaths from each succeeding year since 1892 has been 53, 37, 67, 23, 44, and 107. The death-rate from consumption per 10,000 of population, according to the census enumeration in 1890, has been reduced from 20.45 in 1892 to 15.44 in 1898. If the rate were based upon the actual but unknown population, the showing would be still more favorable.

The reasons for this falling off in the death-rate from consumption are probably more than one, but the principal reason is, undoubtedly, that our people are understanding more and more clearly the significance of the fact that pulmonary tuberculosis is a preventable disease and that it should be prevented.

MASSACHUSETTS.—*State Medical Inspection.*—The recent epidemic of typhoid fever in Norwood (Boston "Advertiser," Aug. 18) has brought local boards of health face to face with the state board in a contest that will not permit of arbitration.

On the one side is grouped the appointees of boards of select-

men, on the other men who, unpaid for their work, throw the reputation of a lifetime into the single assertion:

"Local boards of health in Massachusetts need oversight, and we are not afraid to say so," said Acting Chairman Pillsbury, of the local board of health yesterday in expressing his approval of Dr. Walcott's suggestion relating to a possible corps of state health inspectors.

"Dr. Walcott is a sound man," said Mr. Pillsbury, "and when he makes a suggestion it is always the product of careful forethought. His suggestion that a corps of inspectors be appointed is timely, and, I think, wise. Such a corps would enable local boards of health to prevent contagion more successfully. As I understand it, these inspectors, men of high professional ability, would make immediate report to the local boards of any cases of contagious diseases or condition that would promote contagion. This would be a great help to local boards, for the corps would act as an expert advisory committee as well as givers of the speedy information that is always wanted. In no way would the duties of the corps conflict with those of the local boards. The corps would be a help in the way I have described, and would also serve to bring the boards into closer touch.

"For example, the Boston board has no authority outside of Boston. We may know that impure, germ-laden milk comes from some outlying district. All we can do is to tell the dealer that he cannot sell his milk in Boston. We have no authority over the dealer outside our territory, and often we do not hear of any trouble until it is well developed.

"If a corps of inspectors existed there would be direct and quick communication with the Boston board, in whose district the milk is marketed, and the board in whose district it comes from. It was to promote closer relations between local boards that the State association was organized, but State inspectors might serve the purpose even better, and would be a mutual advisory committee for the boards."

Diphtheria is prevalent in Brookline. Some 40 cases reported during the first two weeks in September.

Epidemic of Malignant Œdema.

Milk producers, cattle men and the cattle commission in Massachusetts, are alarmed at the recent appearance of the most violent and altogether most malignant disease which has appeared in the east in a generation.

From a small beginning in Hubbardston early in August malignant œdema has spread among the towns to the north of Worcester until August 28 there were seven herds of cattle quarantined by the cattle commission.

There had been nearly 30 deaths from the disease in the previous two weeks. In ten days eleven heifers died in their tracks in Hubbardston alone. In all there have been more than twenty-five deaths of calves in towns about Worcester during the two weeks. Among cattle this disease is more contagious and more fatal than smallpox is among men and women. For symptomatic anthrax, although deadly in the extreme amidst cattle, there is a recognized preventive, a serum which prevents the disease as surely as proper vaccination prevents smallpox. But when investigation showed the Worcester county cattle disease to be œdema, the State Cattle Commission was halted in its efforts to prevent the spread of the disease save by quarantining suspected herds of cattle. There is absolutely no known preventive against the spread of malignant œdema; nor any known cure. The virus acts too quickly for medical skill to be of any avail. The calf that contracts the disease is beyond all hope the moment the first symptom appears.

Malignant œdema appears suddenly. There is no warning. The calf hangs its head for a time and then prepares to die. It is simply a matter of hours. Post-mortem examinations show a swelling from effusion of watery fluid beneath the skin or mucous membrane.

Œdema is a dropsy of the cellular tissues beneath the skin. First of all the afflicted calf breathes with great distress, and can be heard some distance. The body does not appreciably swell, but gives beneath the touch. The tissues of the throat become swollen, and examinations show they are dark-colored.

There is inflammation of the intestines and a swelling of all the mucous membranes of the body. Frequently bleeding of the nose appears, but always as a warning of the approach of death.

As the only available means of checking the spread of the disease the State Cattle Commissioners have thus far destroyed all carcasses of calves that die of the disease. They are either burned or buried, and covered with quicklime.

As for the cause of the disease, L. F. Herrick, of Worcester, secretary of the State Cattle Commission, says as far as investigation has gone œdema is due directly to climatic conditions. In all probability, the dry weather conditions of the past two years have started a strange vegetable growth, which is poisonous.

MICHIGAN.—The secretary of the State board reports that for the month of August, 1900, compared with the average for August in the ten years, 1890-99, scarlet fever, measles and pleuritis were more prevalent, and remittent fever, diphtheria, whooping-cough, intermittent fever, pneumonia, inflammation of bowels, erysipelas, and consumption were less than usually prevalent. Including reports by regular observers and others, consumption was reported present at 183 places; typhoid fever at 182 places; scarlet fever at 109 places; measles at 77 places; whooping-cough at 49 places; diphtheria at 37 places; cerebro-spinal meningitis at 12 places; and smallpox at 8 places. Reports from all sources show consumption reported present at 8 places more; typhoid fever at 99 places more; scarlet fever at 9 places more; measles at 46 places less; whooping-cough at 12 places more; diphtheria at the same number of places; cerebro-spinal meningitis at 4 places more; and smallpox at 1 place less, in the month of August, 1900, when compared with the preceding month.

The number of deaths in Michigan reported to the Department of State and published in the Monthly Bulletin of Vital Statistics for August, was 2,954. Annual death rate, 14.5 per 1,000, against 12.4 for the preceding month, and a rate of 13.8 for August, 1899.

Deaths of infants under one year of age, 811; from one to four years inclusive, 260.

Death from pulmonary tuberculosis, 122; other forms of tuberculosis, 51; typhoid fever, 68; diphtheria and croup, 19; measles, 6; whooping cough, 17; scarlet fever, 15; pneumonia, 80; diarrheal diseases of infants under five years, 586; cerebrospinal meningitis, 37; cancer, 121; accidents and violence, 187.

Detroit.—Dr. Harry S. Kiskadden has been appointed health commissioner to succeed Dr. Lawson, resigned (under charges). Dr. W. R. Baker is now recognized by a majority of the board as health officer. Dr. Kiskadden is a regular practitioner and graduated from the College of Physicians and Surgeons in Chicago in 1895. He has practiced in Detroit. Dr. Irwin continues to be a member of the board, though an obstructionist. Nevertheless, the board is now, personally at least, equipped for work. And now that the Michigan State Board has been so signally recognized and honored by the Paris Exposition, it is to be hoped that the hitherto discordant Detroit board and its abettors will wage war against the causes of preventable disease instead of fighting each other.

Ben Oakes, business agent of the Plumbers' Union, declared

(Detroit "Tribune," Aug. 28) that "the sanitary condition of the city is a disgrace. There is scarcely a house in the city to-day where the plumbing is put in according to the law. The trouble is that the grade of plumbers is not entirely the best. The reason is that the examinations are made so easy that any tinsmith with hardly any knowledge, can study up a little in a few books and go up there to the examination board and pass the so-called plumbers' examination. And so it is that we have at least twenty-five of this cheap grade of plumbing concerns in Detroit, and their work going into houses of course makes the sanitary conditions very poor."

MINNESOTA.—Minneapolis, 240,000: Report for July: Total deaths, 208; death rate, 8.8; deaths under five years, 88; from typhoid fever, 9; diphtheria, 2; diarrhœal diseases, 35; acute lung diseases, 13; consumption, 19; cancer, 15.

St. Paul, 165,000: Report for July: Total deaths, 134; death rate, 9.7; deaths under five years, 63; from typhoid fever, 4; diphtheria, 2; whooping cough, 2; acute lung diseases, 4; diarrhœal diseases, 30; consumption, 14; cancer, 10.

MISSOURI.—St. Louis, 540,000—37,000 colored: Report for July: Total deaths, 903; death rate, 16.7; deaths under five years, 331; from measles, 6; scarlet fever, 6; diphtheria and croup, 21; typhoid fever, 15; malarial fevers, 9; diarrhœal diseases, 145; bronchitis and pneumonia, 19, consumption, 80; cancer, 27.

NEW HAMPSHIRE.—Smallpox broke out in Pittsfield early in August and up to the 24th 12 cases had been reported. Prompt measures were taken by Secretary of the State Board of Health for its suppression.

NEW JERSEY.—Geo. P. Olcott, C. E., of East Orange, has been appointed a member of the State Board of Health, to fill the vacancy created by the death of Dr. F. Gauntt. An excellent addition.

Hudson County, 398,960: Report for July: Total deaths, 849; death rate, 25.5; deaths under five years, 431; from croup and diphtheria, 19; typhoid fever, 6; diarrhœal diseases, 106; acute lung diseases, 40; consumption, 80.

Newark, 250,000: Report for four weeks ending August 25: Total deaths, 376; death rate, 19.5; deaths under five years, 150; from diphtheria, 4; scarlet fever, 1; typhoid fever, 8; bronchitis and pneumonia, 12; consumption, 55; diarrhœal diseases, 71; cancer, 9.

Paterson, 97,344: Report for July: Total deaths, 211; death rate, 20.8; deaths under five years, 122; from diphtheria, 3; malarial fevers, 3; diarrhœal diseases, 80; pneumonia, 8; consumption, 20; cancer, 3.

NORTH CAROLINA.—The State Board of Health Bulletin reports for the month of July, from twenty towns having an aggregate population of 142,050—57,549 colored, 221 deaths, of which 114 were colored, and 93 under five years of age. The death rates were: White, 15.2; colored, 23.8; total, 18.6; from typhoid fever, 9; malarial fevers, 7; pneumonia, 6; consumption, 9, diarrhœal diseases, 54.

OHIO.—Cincinnati,. 405,000: Report for the year 1899: Total number of deaths, 6,000; death rate, 14.8; deaths under five years, 1,623; from cerebro-spinal meningitis, 64; typhoid fever, 121; scarlet fever, 13; croup and diphtheria, 94; diarrhœal diseases, 205; pneumonia and bronchitis, 709; consumption, 692.

Cleveland, 395,000: Report for July: Total deaths, 579; death rate, 17.5; deaths under five years, 289; from typhoid fever, 12; scarlet fever, 3; croup and diphtheria, 7; diarrhœal diseases, 107; acute lung diseases, 37; consumption, 46.

PENNSYLVANIA.—Measures are in process by Secretary Lee of the State Board, and Chief Good of the Philadelphia Bureau of Health, for the detail of medical inspectors for the arrondissement of the city.

Philadelphia, 1,266,832. Report for three weeks ending August 25: Total deaths, 1,374; deaths under five years, 499; from diphtheria and croup, 26; scarlet fever, 4; typhoid fever, 19; bronchitis and pneumonia, 50; consumption, 147; cancer, 37.

Pittsburg, 320,000: Report for four weeks ending August 25: Total deaths, 483; death rate, 19.6; deaths under five years, 207; from croup and diphtheria, 7; typhoid fever, 38; scarlet fever, 3; diarrhœal diseases, 77; acute lung diseases, 18; consumption, 26; cancer, 15 Typhoid fever is increasingly prevalent, the daily average being about 25 cases. The total number of cases for the month of August was 499.

McKeesport, August 28: Typhoid fever is growing alarmingly prevalent. The city hospital is overcrowded with patients and not enough nurses can be secured. A new department at the hospital has been fitted up to take care of the typhoid patients. There are 39 cases at the institution, and as many more about the city.

SOUTH CAROLINA.—Charleston, 65,165—36,295 colored: Report for four weeks ending August 25: Total deaths, 160; colored, 112; death rates, white, 21.6; colored, 42.3; total, 30.9; typhoid fever, 21; consumption, 13.

TEXAS.—A move for the creation of a Health Board.—Among the resolutions adopted at the Democratic convention, recently held at Waco, was the following, in which the people of Louisiana are interested:

"We favor the creation of a State Board of Health and provision for the collection of the vital statistics of the State.

"This means that the Legislature has been directed to enact a law creating a State Board of Health to replace the present system, whereby one man has it in his power to absolutely tie up the commerce of the State and of other States on a rumor that contagious disease exists somewhere to the east or west of Texas, which system has been in vogue for many years. The fight for this resolution has been a warm one, and has been carried on without cessation for many years by Dr. Harrison, of Columbus, and other members of the State Medical Association, but not until now have they succeeded in getting the politicians interested in it. The adoption of the resolution by the Democratic convention, under the system of law-making which prevails in Texas, amounts to a command to the Legislature to pass the law indicated, and as the members of the medical profession of the State and a large commercial interest is interested in its passage, it is quite probable that the Legislature, which is to meet next January, will pass the law which will bring Texas up to date in the matter of public health regulations."

UTAH.—Salt Lake City, 70,000: Report for July: Total deaths, 67; death rate, 11.4; deaths under five years, 28; diphtheria, 1; typhoid fever, 3; diarrhœal diseases, 13; acute lung diseases, 5; consumption, 2; cancer, 1.

WASHINGTON.—Seattle, 90,000: Report for July: Total deaths, 64; death rate, 8.5; deaths under five years, 15; from whooping cough, 2; diarrhœal diseases, 2; acute lung diseases, 2; consumption, 1; cancer, 1.

WISCONSIN.—Milwaukee, 285,315: Report for July: Total deaths, 325; death rate, 13.4; deaths under five years, 159; from croup and diphtheria, 4; scarlet fever, 6; typhoid fever, 3; acute lung diseases, 13; consumption, 31; cancer, 19; diarrhœal diseases, 79.

OUR INSULAR HEALTH REPORTS.

PORTO RICO.--Assistant Surgeon King, the Marine Hospital Service official at Ponce, in a report just received, says that in Ponce city and surrounding country for the two weeks ending July 28 the enormous death rate has slightly increased. There were 216 deaths, against 70 births during the same period. An investigation into the remarkable mortality is being conducted by the Superior Board of Health.

MANILA.—Passed Assistant Surgeon Perry, Chief Quarantine Officer for the Philippine Islands, reports on an inspection of the Philippine ports of entry with reference to quarantine service. As a result of the investigation he recommends that, as vessels come direct from Hong Kong to Iloilo, and the distance from there to Manila is thirty-six hours, a small station with barrack accommodation for 100 people be equipped at Iloilo as soon as practicable. He also recommends a small floating and disinfecting plant and limited barrack accommodations at Cebu. He says it is rumored that the Australian ships and those from Singapore will touch at Zamboanga in the near future, and in that event an officer should be stationed there for inspection duty.

The latest report from Manila says that during the week ended June 23 only two cases of plague occurred in Manila, one Chinese and one Filipino, and neither had resulted in death. One more case was reported in Cavite during this period, but all other places in the island have remained free from the plague.

HONOLULU.—The health reports for the months of June and July show alarming increase in the death rate, especially among native Hawaiians and Japanese of the island of Omaha, which has the only complete records. In June the number of deaths per thousand was 45; in July, 49.68. The increase for the past few years, as shown by tables just compiled, has aroused a good deal of discussion. In 1896 the deaths numbered 48. Since then the figures have jumped to 59, 75, 93, and this year 114. Consumption heads the list of diseases, causing deaths in almost every month, and there is agitation for strict measures to quarantine patients. The board of health is discussing a quarantine against consumption, as many people come from other places to enjoy the mild climate, and it is believed that they are a source of danger to the population. Typhoid fever has also claimed a good many victims lately, a slight epidemic having developed in one district of Honolulu. The United States courts in Hawaii were formally inaugurated to-day by Judge M. M. Estee.

CITY OF MEXICO, 344,377. Report for the month of April, 1900: Deaths, 1,585; annual death rate per 1,000, 55.20. Deaths under 5 years of age, 652. Classified causes of death: General diseases, 326; diseases of the nervous system and organs of sense, 101; circulatory apparatus, 53, respiratory, 349; digestive, 450; genito-urinary, 27; puerpural, 14; cutaneous, 23; organs of locomotion, 3; malformation, 1; infancy, 158; old age, 4; external causes, 58; undefined, 18.

BUENOS AYRES, 804,139: Report for the month of May: Total deaths, 1,322; deaths under five years, 485; from diphtheria, 17; scarlet fever, 24; typhoid fever, 17; smallpox, 6; influenza, 14; bubonic pest, 9; consumption, 121; respiratory diseases, 250; diarrhœal diseases, 160; cancer, 67.

INCREASE OF TYPHOID IN PARIS.

Some rather disquieting figures appear in the current official municipal bulletin (Paris dispatch to the London "Telegraph," New York "Times," Sept. 14), with respect to the prevalence of typhoid in Paris. The number of cases registered up to the end of the thirty-first week of the present year, that is to say, to August 13 last, has been 3,148. Of these 568 proved fatal. Moreover, the statistics for the last quarter of this period show an increase, though slight, on the earlier months of the year. Over 800 cases occurred between July 25 and August 13, that is to say, during the last seven weeks of the period in question. The deaths for the same time reached 152, or a proportion in excess of the weekly average since January 1 of about four. Finally, this proportion increased by seven during the last seven days of the period, reaching twenty-nine deaths. All these figures compare unfavorably with those for the corresponding periods of preceding years. In 1899 2,371 cases occurred during the first thirty-one weeks, including 404 deaths. The increase, however, has been chiefly considerable since 1898, when during the same time only 556 cases and 105 deaths were registered.

From 1895 to the year before last the number of typhoid cases for the corresponding period of each twelvemonth never exceeded 700. The publication of these statistics has caused it to be affirmed that typhoid is now prevalent in Paris in an epidemic form. This, however, is not altogether a correct statement of the situation. All scientific opinion here is absolutely unanimous in ascribing the increase of typhoid to one cause alone—impurity of drinking water, produced by the mixing of the Vanne liquid, in

which the typhus bacillus is found, with that from the Avre, the Ourcq, and other sources from which Paris is provisioned, and which by analysis have been ascertained to be free from the microbe. If this cause of the spread of the malady were removed, all the medical authorities state that absolutely no ground for apprehension would exist. It follows that entire immunity is obtained by strictly avoiding Paris water, unless boiled, as a beverage. Of course, the best plan of all would be for the water company to cease mixing the Vanne springs with the others, and using the former only for cleansing purposes. This, however, the responsible authorities confess to be beyond their powers, the volume of liquid being insufficient to insure the drinking provision of the city. Careful Parisians, accordingly, either boil the water supplied by the company before imbibing a drop of it, or else drink only mineral waters. The precaution—which, as a matter of fact, has been strongly recommended for years past here by medical opinion, and has been rigidly adhered to in very many households—is an absolute safeguard against the prevalent typhoid.

QUARANTINE STATION AT HAVANA, CUBA.

The former Spanish quarantine station near the village of Mariel, Cuba, twenty-one miles from Havana, has been transferred by the military authorities to the jurisdiction of the Marine-Hospital Service, and extensive repairs and alterations have been made, with a view to perfecting the efficiency of the station. It is situated on a small, land-locked harbor, capable of admitting deep-draft vessels. There is salt water on two sides of the reservation, while at the rear it is separated from the mainland by a stone wall eight or nine feet in height. The reservation contains eighteen buildings and can accommodate 800 persons. If necessity demanded, this number could be increased to 1,500. Modern steam chambers and other disinfecting machinery have recently been shipped to Havana for installation at the Mariel station. A force of attendants is kept constantly at the station, so that vessels may be referred there for disinfection from Havana or other ports of Cuba. This station forms a valuable adjunct to the equipment in the harbor of Havana.

In the harbor of Havana the floating disinfecting steamer *Sanator*, the finest plant of the kind in the world, is anchored. In addition to this, a shore disinfecting plant is in constant use. All baggage leaving Havana for the United States is now disinfected, and all baggage leaving other ports of the island for the southern

States is disinfected. A complete floating disinfecting plant is now in use at the port of Santiago, and three other plants will soon be completed for use at the ports of Cienfuegos, Matanzas and Nuevitas, respectively. These several plants will be so disposed along the coast of Cuba that it will be convenient to refer infected vessels from any port on the coast to one or the other of the cities where the plants are located. Vessels disinfected in Cuba in accordance with the United States quarantine regulations, and receiving a certificate to that effect from the medical officer of the Marine Hospital Service, are, upon arrival at ports of the United States, considered as having been under observation during the time which elapsed at sea since disinfection, provided no illness of suspicious nature has occurred on board, and thus their time of detention at the quarantine stations of the United States is much lessened. This lessening of detention at quarantine stations of the United States has been a great help to commerce, while at the same time affording as great or greater protection to the United States than under the former methods.

YELLOW FEVER STATISTICS.

HAVANA, Sept. 5.—The yellow fever situation is improving, a decrease in number of deaths from 89 to 75 being reported since Sept. 1.

A foreign ship has just arrived in the harbor with 300 Spanish immigrants on board, and 10,000 are expected during the next few months. It is said that the presence of yellow fever here is principally due to Spanish immigration. To protect American immigration, a place will be established at the best location available from a sanitary standpoint where these Spanish immigrants will be held for observation, and the Government is discussing the establishment of a regular station for receiving and holding immigrants pending their dispersal to various parts of the island.

HAVANA, Sept. 13.—George P. Gregory, Superintendent of the San José Correctional School, has just died of yellow fever. He had been here since July 14 in the employ of the State. He was a native of Whitter, Cal. His widow and four children are here.

Señor J. F. Sagrario, the Spanish Consul here, was attacked by a severe form of yellow fever to-day. His recovery is not expected.

Five new cases of yellow fever were reported to-day, seventy-eight now being under supervision. The mortality report for August, including deaths from all causes, shows a lower total than for

any previous August in ten years, the figures being 559 as against 620 in 1899 and 1,978 in 1898. The death rate for August was 2.76, yellow fever furnishing forty-nine victims and tuberculosis sixty-five.

ABSTRACT OF MORTALITY REPORTED ABROAD FOR THE SECOND QUARTER, 1900.

☞ Abbreviations: tm—total mortality; dr—death rate per 1,000 of population, per annum; v—variola (smallpox); m—measles; s—scarlet fever; tf—typhoid fever; d—diphtheria; w—whooping-cough; dd—diarrhœal diseases; bp—bronchitis and pneumonia; pc—pulmonary consumption.

London, 4,589,120: tm, 20,179; dr, 17.6; v, 2; m, 762; s, 97; tf, 129; d, 331; w, 595; dd, 448; bp, 3,878; pc, 2,012.

Glasgow, 743,969: tm, 3,888; dr, 20.9; m, 153; s, 42; tf, 30; v, 10; d, 44; w, 214; dd, 93; bp, 789.

Liverpool, 634,780: tm, 3,977; dr, 25.1; v, 14; m, 48; s, 22; tf, 30; d, 29; w, 184; dd, 45.

Manchester, 548,768: tm, 3,472; dr, 25.3; m, 95; s, 24; tf, 16; d, 22; w, 160; dd, 66; bp, 926; pc, 324.

Birmingham, 519,610: tm, 2,661; dr, 22.4; m, 34; s, 27; tf, 25; d, 25; w, 99; dd, 26.

Leeds, 431,287: tm, 2,095; dr, 19.4; m, 96; s, 19; tf, 19; d, 57; w, 43; dd, 16.

Sheffield, 365,922: tm, 1,914; dr, 23.7; m, 71; s, 17; tf, 5; d, 97; w, 49; dd, 10.

Belfast, 359,000: tm, 1,646; dr, 18.4; m, 11; s, 1; tf, 85; d, 12; w, 30; dd, 28; bp, 379; pc, 336.

Dublin, 349,594: tm, 2,178; dr, 25.0; v, 5; m, 4; s, 2; tf, 31; d, 10; w, 25; dd, 22; bp, 414; pc, 331.

Bristol, 324,973: tm, 1,461; dr, 18.0; m, 134; s, 6; tf, 11; d, 20; w, 12; dd, 8.

Edinburgh, 302,262: tm, 1,439; dr, 19.1; m, 32; s, 5; tf, 6; d, 20; w, 13; dd, 35; bp, 221; pc, 184.

Bradford, 291,535; tm, 1,252; dr, 17.2; m, 35; s, 22; tf, 12; d, 7; w, 8; dd, 3.

Nottingham, 242,656: tm, 1,434; dr, 23.6; m, 11; s, 13; tf, 11; d, 7; w, 11; dd, 10.

Hull, 238,736: tm, 1,013; dr, 17.0; m, 53; s, 9; tf, 10; d, 8; w, 15; dd, 7.

Newcastle, 234,369: tm, 1,019; dr, 17.3; m, 23; s, 3; tf, 4; d, 5; w, 12; dd, 1.

Salford, 220,816: tm, 1,296; dr, 23.5; v, 1; m, 26; s, 24; tf, 11; d, 12; w, 67; dd, 22.

Leicester, 219,169: tm, 936; dr, 16.9; m, 11; s, 4; tf, 10; d, 64; w, 20; dd, 3.

Portsmouth, 194,955: tm, 747; dr, 15.3; s, 2; tf, 6; d, 19; w, 26; dd, 4.

Cardiff, 194,247: tm, 719; dr, 14.8; v, 1; m, 96; s, 2; tf, 4; d, 25; w, 10; dd, 2.

Brighton, 124,148: tm, 544; dr, 17.5; m, 3; s, 5; tf, 2; d, 15; w, 9; dd, 2.

Norwich, 114,855; tm, 450; dr, 15.7; tf, 3; d, 3; w, 26; dd, 6.

Plymouth, 102,161: tm, 575; dr, 22.5; m, 64; tf, 1; d, 2; dd, 4.

Brussels, 570,844: tm, 3,396; dr, 15.8; m, 13; s, 5; tf, 19; d, 10; w, 12; dd, 158; bp, 379; pc, 279.

Amsterdam, 523,743: tm, 2,081; dr, 25.9; m, 3; tf, 12; d, 6; w, 29; dd, 2; bp, 336; pc, 241.

Rotterdam, 320,991: tm, 1,329; dr, 16.6; m, 13; s, 1; tf, 6; d, 29; w, 13; d, 1.

Hague, 205,328: tm, 800; dr, 15.6; m, 29; s, 1; d, 10; w, 5.

Paris, 2,511,629: tm, 12,953; dr, 20.6; v, 13; m, 359; s, 61; tf, 191; d, 89; w, 67; dd, 494; bp, 1,623; pc, 2,688.

Lyons, 488,719: tm, 2,435; dr, 19.9; v, 20; m, 24; s, 12; tf, 20; d, 13; w, 7; dd, 98; bp, 428; pc, 384.

Lille, 222,759: tm, 1,128; dr, 20.3; v, 2; m, 24; s, 2; w, 3; dd, 121; bp, 140; pc, 185.

St. Etienne, 135,784: tm, 736; dr, 21.7; v, 3; m, 24; s, 8; tf, 7; d, 7; w, 6; dd, 31; bp, 133; pc, 112.

Roubaix, 124,447: tm, 600; dr, 19.3; m, 5; tf, 5; d, 4; w, 3; dd, 56; bp, 98; pc, 100.

Nice, 144,421: tm, 548; dr, 19.2; v, 4; m, 3; d, 5; w, 4; dd, 32; bp, 80; pc, 70.

Havre, 119,470: tm, 885; dr, 29.6; m, 6; s, 1; tf, 35; d, 3; w, 1; dd, 76; bp, 84; pc, 54.

Dunkirk, 39,718: tm, 222; dr, 22.4; m, 27; s, 2; tf, 8; w, 9; dd, 18; bp, 29; pc, 32.

Pau, 33,072: tm, 152; dr, 18.4; tf, 2; d, 1; w, 3; dd, 7; bp, 23; pc, 23.

Berlin, 1,767,605: tm, 8,076; dr, 18.3; m, 142; s, 196; tf, 18; d, 134; dd, 687; bp, 882; pc, 1,267.

Hamburg, 691,349: tm, 3,079; dr, 21.9; m, 61; s, 16; tf, 4; d, 25; w, 16; dd, 113; bp, 468; pc, 423.

Munich, 463,000: tm, 3,014; dr, 26.0; m, 93; s, 1; tf, 9; d, 18; w, 8; dd, 519; bp, 285; pc, 499.

Leipzig, 439,233: tm, 2,027; dr, 18.5; m, 10; s, 3; tf, 6; d, 23; dd, 204; bp, 317; pc, 259.

Breslau, 406,461: tm, 2,723; dr, 26.5; m, 6; s, 2; tf, 7; d, 11; w, 17; dd, 336; bp, 371; pc, 408.

Dresden, 401,400: tm, 1,816; dr, 18.1; m, 14; s, 4; tf, 4; d, 12; w, 12; dd, 129; bp, 235; pc, 264.

Cologne, 362,000: tm, 1,808; dr, 20.9; m, 23; s, 18; tf, 7; d, 12; w, 30; dd, 145; bp, 222; pc, 238.

Frankfort-on-the-M., 257,056: tm, 1,110; dr, 17.3; s, 5; d, 4; dd, 52; bp, 171; pc, 204.

Hanover, 241,106: tm, 915; dr, 15.2; m, 2; s, 2; d, 12; dd, 34; bp, 136; pc, 143.

Magdeburg, 225,598: tm, 1,073; dr, 19.0; m, 1; s, 21; tf, 2; d, 19; dd, 51; bp, 155; pc, 122.

Nuremberg, 217,512: tm, 1,504; dr, 27.6; m, 3; s, 4; tf, 3; d, 7; dd, 162; bp, 237; pc, 218.

Dusseldorf, 205,056: tm, 776; dr, 19.0; m, 5; s, 4; d, 10; dd, 65; bp, 123; pc, 121.

Charlottenburg, 183,270: tm, 679; dr, 14.8; m, 10; s, 21; d, 10; dd, 59; bp, 124; pc, 69.

Chemnitz, 181,243: tm, 1,315; dr, 28.8; s, 3; d, 10; dd, 59; bp, 124; pc, 69.

Stettin, 164,031: tm, 858; dr, 21.6; s, 9; d, 5; dd, 128; bp, 91; pc, 79.

Stuttgart, 166,417: tm, 692; dr, 18.4; m, 6; s, 8; d, 17; dd, 31; bp, 116; pc, 83.

Altona, 154,164: tm, 664; dr, 17.2; m, 18; s, 4; tf, 2; d, 5; dd. 24; bp, 106; pc, 90.

Bremen, 151,749: tm, 686; dr, 18.1; m, 8; s, 3; tf, 1; dd, 17; bp, 91; pc, 128.

Elberfeld, 151,657: tm, 632; dr, 17.3; m, 4; s, 26; tf, 4; d, 14; dd, 341; bp, 108; pc, 57.

Strasburg, 147,009: tm, 790; dr, 21.5; m, 2; s, 1; tf, 2; d, 6; dd, 127; bp, 146; pc, 112.

Dantzig, 130,431: tm, 796; dr, 24.4; m, 14; s, 7; tf, 1; d, 10; dd, 95; bp, 114; pc, 77.

Hallé, 129,717: tm, 788; dr, 24.3; m, 1; s, 4; tf, 1; d, 1; dd, 61; bp, 116; pc, 88.

Brunswick, 128,354: tm, 555; dr, 17.3; s, 3; d, 3; dd, 44; bp, 64; pc, 82.

Essen, 112,496: tm, 645; dr, 22.9; m, 30; s, 32; tf, 10; d, 12; dd, 36; bp, 159; pc, 68.

Crefeld, 108,959: tm, 391; dr, 14.4; tf, 3; d, 3; dd, 19; bp, 69; pc, 41.

Mayence, 79,607: tm, 433; dr, 23.0; m, 15; s, 3; dd, 27; bp, 56; pc, 71.

Metz, 58,987: tm, 280; dr, 19.0; s, 2; tf, 1; dd, 50; bp, 46; pc, 38.

Berne, 55,472: tm, 322; dr, 23.2; m, 3; d, 8; w, 7; dd, 19; bp, 43; pc, 67.

Bâle, 104,724; tm, 12; dr, 16.2; m, 3; d, 8; w, 6; dd, 30; bp, 49; pc, 88.

Geneva, 90,708: tm, 355; dr, 15.7; v, 1; d, 1; w, 2; dd, 9; bp, 30; pc, 71.

Lausanne, 44,266: tm, 186; dr, 16.8; v, 4; m, 1; d, 4; w, 5; dd, 73; bp, 65; pc, 121.

Zurich, 161,726: tm, 711; dr, 17.6; m, 16; tf, 1; d, 4; w, 5; dd, 73; bp, 65; pc, 121.

Chaux-de-Fonds, 32,554: tm, 130; dr, 19.1; m, 1; d, 3; dd, 10; bp, 25; pc, 16.

Vienna, 1,639,811: tm, 9,509; dr, 23.2; m, 208; s, 34; tf, 41; d, 53; w, 49; dd, 744; bp, 1,813; pc, 1,912.

Buda-Pesth, 669,120: tm, 4,192; dr, 25.1; m, 83; s, 54; tf, 13; d, 33; w, 23; dd, 221; bp, 714; pc, 887.

Prague, 385,952: tm, 2,115; dr, 21.9; m, 7; s, 4; tf, 25; d, 11; w, 16; dd, 69; bp, 420; pc, 598.

Trieste, 167,578: tm, 1,138; dr, 27.2; s, 16; tf, 5; d, 11; w, 7; dd, 69; bp, 239; pc, 160.

Lemberg, 142,280: tm, 1,162; dr, 32.7; v, 1; tf, 4; d, 5; dd, 30; bp, 186; pc, 347.

Brunn, 104,808: tm, 744; dr, 35.1; v, 1; m, 2; s, 4; tf, 9; d, 2; w, 4; bp, 109; pc, 207.

Cracow, 84,869: tm, 744; dr, 35.1; v, 1; m, 2; s, 4; tf, 9; d, 9; w, 4; dd, 30; bp, 109; pc, 207.

Pilsen, 67,218: tm, 423; dr, 25.2; m, 13; s, 3; tf, 1; d, 2; w, 4; bp, 34; pc, 68.

Lintz, 53,145: tm, 486; dr, 36.6; m, 13; s, 1; tf, 4; d, 3; w, 1; dd, 1; bp, 26; pc, 125.

Copenhagen, 349,000: tm, 1,565; dr, 17.9; m, 10; s, 13; tf, 3; d, 33; w, 12; dd, 84; bp, 280; pc, 213.

Stockholm, 291,580: tm, 1,418; dr, 19.4; m, 4; s, 4; d, 35; w, 12; dd, 84; bp, 280; pc, 213.

Gothenburg, 125,798: tm, 531; dr, 22.0; m, 10; s, 3; d, 3; w, 12; dd, 20; bp, 57; pc, 108.

Christiania, 221,256: tm, 1,030; dr, 19.1; m, 16; s, 4; d, 3; w, 32; dd, 67; bp, 144; pc, 207.

St. Petersburg, 1,132,677: tm, 7,692; dr, 27.2; v, 89; m, 187; s, 142; tf, 218; d, 228; w, 57; dd, 722; bp, 345; pc, 1,004.

Moscow, 1,023,817: tm, 8,239; dr, 32.2; v, 36; m, 333; s, 104; tf, 27; d, 171; w, 64; dd, 1,219; bp, 266; pc, 789.

Odessa, 426,500: tm, 2,412; dr, 21.6; v, 21; m, 46; s, 15; tf, 23; d, 23; w, 8; dd, 251; pc, 300.

Venise, 172,491: tm, 795; dr, 18.4; v, 1; m, 6; tf, 9; d, 21; w, 4; dd, 43; bp, 110; pc, 86.

Bucharest, 282,071: tm, 1,588; dr, 22.5; m, 3; s, 22; tf, 7; d, 16; w, 5; dd, 105; bp, 204; pc, 281.

Jassy, 70,065: tm, 574; dr, 32.8 s, 5; tf, 2; dd, 45; bp, 33; pc, 85.

For the First Quarter, 1900:

Marseilles, 447,344: tm, 4,146; dr, 37.1.

Rouen, 114,817: tm, 1,074; dr, 37.3; v, 1; m, 3; tf, 6; d, 5; w, 3; dd, 64; bp, 202; pc, 145.

Helsingfors, 87,810: tm, 417; dr, 18.9; v, 2; m, 14; s, 28; d, 4; w, 19; dd, 25; bp, 74; pc, 69.

Limoges, 77,703: tm, 585; dr, 30.1; v, 2; tf, 2; d, 2; w, 1; dd, 21; bp, 164; pc, 92.

Besançon, 58,010: tm, 466; dr, 33.9; d, 1; dd, 6; bp, 112; pc, 56.

Debreczin, 61,300: tm, 452; dr, 29.5; v, 1; m, 1; s, 4; tf, 2; d, 2.

Presburg, 53,200: tm, 452; dr, 33.4; v, 1; m, 5; tf, 1; d, 2: w, 1; pc, 43.

Warsaw, 601,480: tm, 3,289; dr, 21.9; v, 37; m, 20; s, 30; tf, 39; d, 40; w, 30; dd, 224; bp, 646; pc, 441.

Rome, 507,244: tm, 3,186; dr, 24.7; m, 150; tf, 20; d, 38; w, 3; dd, 100; bp, 904; pc, 219.

Turin, 344,203: tm, 2,610; dr, 30.3; m, 66; s, 6; tf, 10; d, 17; w, 8; dd, 80; bp, 675; pc, 264.

Genoa, 226,432: tm, 2,019; dr, 35.7; m, 53; tf, 5; d, 14; w, 2; dd, 24; bp, 781; pc, 152.

Milan, 494,486: tm, 3,111; dr, 25.2; m, 14; s, 2; tf, 11; d, 43; w, 14; dd, 72; bp, 955; pc, 257.

Bologne, 154,234: tm, 955; dr, 24.8; tf, 7; d, 8; w, 9; dd, 36; bp, 231; pc, 62.

Brescia, 71,976: tm, 661; dr, 36.8; v, 1; tf, 4; d, 10; w, 1; dd, 73; bp, 235.

Madrid, 512,596: tm, 4,719; dr, 36.8; v, 136; m, 75; s, 11; tf, 45; d, 48; w, 7; dd, 354; bp, 1,290; pc, 548.

Lisbon, 352,594: tm, 2,715; dr, 30.9; v, 1; m, 18; tf, 16; d, 28; w, 5; dd, 124; bp, 457; pc, 328.

Bilboa, 74,142: tm, 710; dr, 38.3; v, 4; m, 4; tf, 8; d, 17; w, 4; dd, 9; bp, 202; pc, 83.

Cairo, 534,677: tm, 5,546; dr, 41.5; v, 55; m, 172; tf, 84; d, 53; w, 5; dd, 674; bp, 1,426; pc, 349.

Alexandria, 273,563: tm, 2,395; dr, 35.0 v, 4; s, 1; tf, 13; d, 14; dd, 525; bp, 534; pc, 134.

Damietta, 31,285: tm, 222; dr, 28.4; m, 10; tf, 3; d, 1; w, 1; dd, 40; bp, 33; pc, 13.

Port Said, 30,773: tm, 183; dr, 23.8; m, 1; tf, 4; d, 5; dd, 26; bp, 45; pc, 20.

Suez, 19,526: tm, 232; dr, 56.7; m, 6; d, 3; w, 2; dd, 25; bp, 43; pc, 18.

BUBONIC PLAGUE REPORTS.

EGYPT:

Port Said, April 20 to August 3, 94 cases with 38 deaths.

Alexandria, July 28 to August 3, 4 cases under treatment, three new cases.

CHINA:

Hong Kong, June 2 to July 7, 371 cases, 351 deaths; and in Victoria (precinct) 272 cases, 186 deaths.

FORMOSA:

Lamsin, April 1 to July 12, 831 cases, 613 deaths.

AUSTRALIA:

Sydney, June 12, 63 cases in hospital; June 24 to 30, 12 cases, 3 deaths.

Queensland, July 1 to 7, 8 cases, 5 deaths.

PHILIPPINES:

Manila, January 20 to March 3, 50 cases, 38 deaths; March 3 to April 28, 85 cases, 63 deaths; April 28 to May 26, 20 cases, 14 deaths.

INDIA:

Bombay, April 29 to July 14, 2,200 cases, 1,628 deaths; throughout, including Bombay, since April 29, 8,749 cases, 6,984 deaths.

BRAZIL:

Rio de Janeiro, May 6 to July 13, 298 cases, 128 deaths.

ENGLAND:

London, to August 3, 4 cases, 2 deaths.

Glasgow, Scotland, there have been about 20 cases reported, September 1 to 15, with 5 deaths; 103 cases (suspected) under observation.

CHOLERA.

INDIA:

Bombay, May 18 to July 24, 1,264 deaths.

Calcutta, April 28 to July 21, 268 deaths.

Madras, May 19 to July 20, 9 deaths.

BOOK REVIEWS.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS. A Manual for the Use of Physicians, Surgeons, and Students. By CHARLES W. PURDY, LL.D., M.D., Queen's University, Fellow of the Royal College of Physicians and Surgeons, Kingston, Canada; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Author of "Bright's Disease and Allied Affections of the Kidneys"; also of "Diabetes: Its Causes, Symptoms, and Treatment." *Fifth Revised and Enlarged Edition.* With numerous Illustrations, including Photo-Engravings, Colored Plates, and Tables for estimating total solids from Specific Gravity, Chlorides, Phosphates, Sulphates, Albumin, Reaction of Proteids, Sugar, etc., etc., in Urine. 6x9 inches. Pages xvi—406. Extra Cloth, $3.00 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

A very complete treatise on one of the most important subjects that engages the attention of medical practitioners in all circumstances. The esteem in which this treatise is held by physicians is well attested by the requirement of this edition—the fifth within the period of six years. Yet knowledge of the subject has been so progressive as to require this addition of important new matter to every succeeding edition. To this, besides thorough revision, a new chapter on the microscope and its use in uranalysis has been added. New methods and new tables have been introduced, comprehending the range of centrifugal analysis, by which the quantities of albumin and chlorine, of phosphoric and sulphuric acids in the urine may be simply and rapidly determined, both relatively and absolutely with greater accuracy.

The illustrations are excellent and clearly elucidative of the text in detail, in which no pains seem to have been spared to improve the practical bearings of the work on clinical medicine as well as to bring it thoroughly up to date in its pathological demonstrations.

AIR, WATER AND FOOD FROM A SANITARY STANDPOINT. By ELLEN H. RICHARDS and ALPHEUS G. WOODMAN, Instructors in Sanitary Chemistry, Massachusetts Institute of Technology. 8vo., pp. 226. Illustrated. Price $2.00. New York: John Wiley & Sons. London: Chapman and Hall, 1900.

The "standpoint" from which the "three essentials of human existence," which form the subject of this treatise, are viewed, forcibly expresses the limitations of this work: "*Clean* air, *safe* water, and *good* food," are its bone and sinew. What these are, the importance of their maintenance and how to maintain them, and their requirements by individuals and communities, as necessary means for the maintenance of health, are described in practical detail. Air, in its relation to health, comprehends a lucid statement of its composition, the impurities to which it is liable, methods of examination and ventilation. Water is considered from the householder's standpoint: its source, properties, liabilities to impurities and methods of examination. Food is defined and classified with reference to its sources, composition and dietaries, sophistication and analysis.

Tables are appended: I. Tension of aqueous vapor in millimetres of mercury from 0° to 30° .9C., reduced to 0° and sea-level. II. Weight of a cubic centimetre of carbondioxide from 746 to 778 millimetres pressure and from 10° to 25° C. Corrected for the tension of aqueous vapor. III. Average composition of waters. Based on Massachusetts data. IV. Normal waters from various parts of North America. V. Sewage and polluted waters. VI. Mineral contents of some natural waters. VII. Hardness, showing the parts of calcium carbonate ($CaCO_2$) in 1,000,000 for each tenth of a cubic centimetre of soap solution used. VIII. Showing the number of cubic centimetres of oxygen dissolved in 1,000 cubic centimetres of water when saturated at different temperatures, as calculated by Winkler. IX. For correcting the specific gravity of milk according to temperature. Adapted from the table of Vieth. X. Percentage of alcohol by weight from the specific gravity at 15°.5C.

Appendix B. Reagents: air analysis, water analysis, food analysis.

Altogether, this book is alike commendable as a text-book in sanitary chemistry and as a manual for sanitary inspectors; to householders and other persons who would understand their con-

stant relation to controllable conditions more or less in conflict with health.

A MANUAL OF PERSONAL HYGIENE. Edited by WALTER L. PYLE, A.M., M.D. Assistant Surgeon to Wills Eye Hospital, Philadelphia; Fellow of the American Academy of Medicine; Former Editor of the "International Medical Magazine," etc. Contributors: J. W. Courtney, M. D.; George Howard Fox, M. D.; E. Fletcher Ingalls, M. D.; Walter L. Pyle, M. D.; B. Alexander Randall, M. D.; G. N. Stewart, M. D.; Charles G. Stockton, M. D. Illustrated. 12mo., pp. 344. Price, $1.50. Philadelphia: W. B. Saunders & Co. 1900.

A book of seven essays, by the contributors severally, in the order of their names: Hygiene of the Digestive Apparatus; Hygiene of the Skin and Its Appendages; Hygiene of the Vocal and Respiratory Apparatus; Hygiene of the Ear; Hygiene of the Eye; Hygiene of the Brain and Nervous System; Physical Exercise. These essays are very comprehensive and each one complete in itself, beginning with a concise description of the anatomy and physiology of the part treated of, as a standard of maintenance by hygienic living. Hence, the book is both profound and elementary: profound in that it delineates the standard of hygienic knowledge—the organism in health; and elementary in its exposition of the means for the maintenance of health and of the conditions in conflict with it.

Taken altogether, these essays are well nigh commensurate of the whole scope of personal hygiene. The authors are recognized specialists, constantly in the foreground of progressive upheavals in their several departments and ever attentive to the results of unhygienic living. Hence a thoroughly up-to-date manual, displaying the best conditions and the most recent developments in the progress of hygienic knowledge.

CHLORINE IN THE NATURAL WATERS OF THE STATE OF NEW JERSEY. By WILLIAM S. MYERS, Department of Chemistry.

A pamphlet excerpt from the annual report of the State Geologist for 1899, with tabulated examinations of some forty water supplies of the State, which show, by the general presence of chlorine, and in a large proportion of them to a dangerous degree, the extent of sewage pollution. The author well observes that, "in view of the steady increase in the population of the State and of our adjoining great cities, and in view of the steady increase in *per capita* daily consumption of water, it is difficult to overestimate

the importance of conserving our present supply." Reference is made to a recent report of Vermont official chemists that, of the large number of waters examined by them during a period of five years, 20 per cent. of the spring waters examined were impure. Of the wells, 50 per cent. were impure. Of the pond and stream supplies, 41 per cent. were impure or unfit for use.

MUNICIPAL IMPROVEMENTS. A Manual of the Methods, Utility and Cost of Public Improvements, for the Municipal Officer. By W. F. GOODHUE, Civil Engineer, Member of the Western Society of Engineers and the Wisconsin Polytechnic Society. Third Edition, Enlarged. 12mo. Cloth, $1.75. New York: John Wiley & Sons, 43-45 East Nineteenth Street.

Prefatorily, the author of this work remarks that "the essence of practical politics is a businesslike management of municipal affairs, and this idea has come to the fore with an amazing strength in the last half decade."

The object of his book is to bring his work and that of his profession into line with the improved conditions of municipal affairs. In this third edition, besides a general revision of previous editions, he has entirely rewritten the chapter on street surfaces, and gives a more detailed description of the different kinds of pavements, in harmony with the best practice concerning these improvements. There are new chapters on Elevated Traffic *vs.* Subways, Civil-Service Appointments, and Municipal Ownership. It is a practical treatise of extensive comprehension, cogently written; devoid of technicalities and mathematical formula, and singularly well adapted to practical use in all kinds of municipal improvements.

PROGRESSIVE MEDICINE, Vol. III., September, 1900, well maintains the standard of practicability and interest which has marked this excellent publication. The contributors are: Dr. William Ewart, of London, on Diseases of the Thorax and Its Viscera; Stelwagon on Diseases of the Skin; Spiller on the Diseases of the Nervous System, who well sustains the merited reputation of his preceptor, Weir Mitchell. A perusal of Norris' contribution on Obstetrics is calculated to surprise the general practitioner with the advancement made in a specialty in which treatment is generally considered to have reached a well-perfected stage. Editor and contributors alike are entitled to the thanks of their wide audience for having produced a volume so practical, and yet of a scientific standard creditable to American medicine. Octavo, hand-

somely bound in cloth, 408 pages, with 14 engravings. Lea Brothers & Co., Philadelphia and New York. Issued quarterly. Price, $10 per year.

CONTEMPORARY LITERATURE.

NATURAL INCREASE AS A FACTOR IN THE GROWTH OF POPULATION.

Is it true, then, that there has been any appreciable increase during the present decade in the birth rate, or, on the other hand, any marked decrease in the death rate, which would favorably affect the average annual increase of our total numbers? Doubtless the continued improvement of sanitary conditions in the large towns and the general progress in the conditions of living and in the treatment of disease are adding steadily, if not rapidly, to the average longevity of our people. But all indications would tend to confirm the impression that the average annual birth rate is declining rather than gaining in the United States. In France, for example, although the modern improvements in sanitation, treatment of disease, and care of children are diminishing the death rate, there has at the same time been such a falling off in the birth rate that the total population figures are approximately maintained solely by reason of a moderate stream of immigration from Italy and other neighboring countries. It is perhaps true that there are now some localities of considerable extent in the United States where, if it were not for the fact that there is some immigration, and also that there is a comparatively high birth rate among the immigrants, the total population would by no means hold its own, on account of the lower birth rate among the native American element. An analytical study of the facts that the new census will gather must throw much light upon interesting questions touching the present tendencies of population in this country. If the statistics are to be relied upon, the increase in population that was due to the excess of births over deaths was about 14 per cent. for the ten years 1880-90; but—further assuming the correctness of the immigration statistics for the past decade—if we accept the estimates which call for a population of 80,000,000 this year, we shall have to look to the excess of births over deaths for a gain of almost 22 per cent. To any one at all familiar with vital statistics, it is evident without further discussion that such a radical change in the conditions of population increase in the United States could not possibly have taken place. Even if one were to be content with estimating that we should have gained population at the same

average rate in the current decade as in the one preceding, it would still be necessary, on account of the falling off in immigration, to rely upon a considerably higher rate of gain in the excess of births over deaths in order to bring up the total. And there is no sufficient reason to believe that the actual census work will show any such gain. If the decade should have resulted, not in the maintenance of the same rate per cent. of gain as that of the preceding ten years, but simply in the gain of a like number of people—namely, about 12,500,000—our total population would be, in round figures, 75,000,000. Those who expect a greater aggregate than 75,000,000 will be disappointed.—From "The Progress of the World," in the "American Monthly Review of Reviews" for September.

THE EMPIRE OF THE DEAD.

The popular and resourceful president of the Christian Endeavor Society, the Rev. Dr. F. E. Clark, went to the Far East last year to attend Christian Endeavor conventions in Japan, Siam and China, and left Peking for home two days before the outbreak of the savage assaults upon foreigners which have horrified the civilized world. In an article in the September number of the "North American Review," Dr. Clark gives a vivid description of China, "The Empire of the Dead," as it impressed him. He shows impressively, by reference to the details of daily life among the people of China, how thoroughly the Hand of the Dead controls that empire, and how the Chinese to-day are animated by the ideas and ideals of the past. But, in Dr. Clark's judgment, the missionary from the West is slowly but surely emancipating the ancient empire from this thraldom.

"The missionary is breaking the grip of the Dead Hand of the Past on China's throat. The missionary is showing the Chinaman that the 'Foreign Devil,' as he calls all 'Outlanders,' has something that the Chinaman needs, something of science and civilization, as well as religion. The missionary is opening the Chinaman's eyes to the folly of his old superstitions. The missionary is unsealing the Chinaman's ears, that he may hear the tramp of the advancing nations of the twentieth century. The missionary is slowly but surely transforming the Empire of the Dead into the Empire of Life and Light. There may be, for a time, revolutions and counter-revolutions, anarchy and misrule, turmoil and massacre; but the yeast, insignificant as it now appears to some, has been placed within the meal. The Brighter Day may be long in coming to distracted China, but it is on the way."

WHAT THE CHINESE THINK OF US.

Mr. Stephen Bonsal, who was at one time Secretary of the United States Legation and Charge d'Affaires in Peking, publishes an article in the "North American Review" for September, the object of which is to show "What the Chinese think of us." Mr. Bonsal makes it clear that they have not had much cause to think very well of us; that our course toward them has been fitted to arouse their suspicions and almost to justify their resentment. That their antipathy toward the Western missionaries is not due to innate intolerance of foreign religions is shown by the fact that they have permitted the Mohammedans for centuries to worship God according to their own creed, and that a certain Christian church in Peking—belonging to the Greek Church—has never been molested. But, unfortunately, the action of the countries from which the Western missionaries come has rendered it difficult for them to convince the Chinese that they are completely innocent of political designs. Mr. Bonsal thinks that, in our treatment of the Chinese, we have not shown any particular desire to gain their good opinion, and he suggests a change in our attitude to them:

"We have always treated the Chinese as though they were without feelings, and without vanity, pride or combativeness; and yet every one who knows them will tell you they have all of these qualities. When we are in a position to exact the punishment of the men who fired upon our legations, whether they be princes of the Clan, or Boxers, let us listen to what the Chinese will have to say about the bombardment of the Taku forts. It will be a new departure, and it might work wonders. We might 'civilize' the Chinese by showing them some consideration and treating them with common decency. The old policy of knocking the Chinese over the head has not brought satisfactory results—they have too many heads. A common ground might be reached by admitting, for instance, that it is possible for Western admirals as for Eastern princes and wild sectaries to do, in hot blood, things they never would have been guilty of upon mature consideration. If we do this, there will be no danger of war, and we shall be spared a conflict into which no one who knows what it may come to mean can think of entering with a light heart."

CHINA BEST UNBROKEN.

The Rev. Dr. D. Z. Sheffield, for thirty years a missionary in

China, urges in the September "Century" that the Middle Kingdom ought not to be dismembered.

It is easy to say that it is better that China be broken up and its people reformed in its social institutions than that the past corrupt and antediluvian order of society continue; but is disintegration or continued stagnation the only alternative? What are the prospective dangers accompanying the dissolution of the Chinese government? The territory and people would be divided up between England, Russia, France, and Germany. How long could this order of things continue? As a necessity of government the Chinese in large numbers would ultimately receive Western military training and acquire skill and experience in military evolution. Under proper conditions of discipline and direction the Chinese are courageous and hardy soldiers. The nation has a deep reverence for its ancestry, a strong race attachment, a profound regard for its customs and institutions. If the people are broken apart by foreign power in the time of their weakness, they will come together again in fierce collision with that power when they have in some measure recovered possession of their strength. China is too great a prize to be divided up among the nations of the West, to become an added element of jealousy and rivalry. The suggestion of the division taxes the diplomacy of the nations to the utmost to preserve peace in their relations. It is doubtful if it can be accomplished without war, and if successfully accomplished the possession and government of this vast disintegrated territory, with its people restless under the wrongs they have suffered, would increase the present international tension and continually jeopardize the peace of the world.

"CAN CHINA BE SAVED?" is the title of an exhaustive article by Talcott Williams in the "Review of Reviews" for September. Mr. Williams possesses a rare fund of information on Oriental subjects, and he has a definite programme to offer for the solution of the world-problem in China. Taking as a model the Imperial Customs Service, so long and ably administered by Sir Robert Hart, Mr. Williams proposes to organize the Chinese government in a system of commissions, under nominally Chinese control, but officered by Europeans, just as the custom service is now officered. The present Chinese civil-service machine would be retained, because it is suited to the temper and needs of the people.

"THE INFLUENCE OF THE WESTERN WORLD ON CHINA" is the title of a timely article in the September "Century," the writer

being the Rev. D. Z. Sheffield, D. D., for thirty years a missionary in the Middle Kingdom. Dr. Sheffield sailed from San Francisco on June 22, having just learned of the burning of the North China College, of which he is President. The article, written shortly before his departure, is wholly apropos of the present situation, and it contains a powerful protest against any dismemberment of the Chinese Empire.

"THE LIVING AGE" for September 8 translates from the "Nuova Antologia" a rather pessimistic presentation of "Diplomatic Ineptitude and the Chinese War," by the distinguished Professor Lombroso.—Mr. Josiah Quincy's paper on "The United States in China," in the same number, from "The Contemporary Review," is a thoughtful and sagacious discussion of the question, free from partisan bias.

A BIT OF OLD PARIS.

One of the most interesting features of the Paris Exposition is described by Grace Wickham Curran in "St. Nicholas" for September. The sight of water is a rest and refreshment in itself, she says, and the beautiful Seine river has been made more a part of this exposition than of any former one. Some of the most interesting and beautiful buildings are upon its banks or near by. From the water's edge, where the river bends away to the southwest, rise the towers and walls of Old Paris, a little part of the Paris of the Middle Ages. Long ago, when this bank was covered with a willow thicket, from which stretched away peaceful pastures for grazing cows, the real Old Paris was located far up the river on the Isle and its adjacent banks. It was a city of walls and strong towers, of gates and protecting fortresses, of colleges and churches, priests and lords and ladies, busy shopkeepers and turbulent, roistering students. Forty-nine colleges it boasted, three great abbeys, a cathedral and a hundred chapels and churches, and the houses which lined its narrow, winding streets were sculptured with rude but often beautiful Gothic designs.

A bit of that old city has been reproduced here to the life. Every house-front, every tower, is historic, and has its story, and everywhere are glimpses of the life of long ago.

Before the entrance gate and through the streets march guards in the dress of olden times; from a high balcony at the river's edge a herald announces the opening of the gates in the morning, and their closing at night when the curfew bells ring. Little shops

line the streets, with their pictured signs hanging out overhead, inviting all to buy at the Red Lion, the Golden Shell, or the Dragon, while shopkeepers in medieval dress vend their wares within. In the open place before the church, troubadours and minstrels sing their songs and tell their tales, a sorceress on a street corner carries on her mysterious trade, a choir sings in the church, and a troupe of actors play in the audience-room of the palace. In a conspicuous place rises the pillory, suggestive and threatening.

AMERICAN PUBLIC HEALTH ASSOCIATION.

DR. PETER H. BRYCE, Toronto, Ontario, *President.*
DR. CHARLES O. PROBST, Columbus, O., *Secretary.*
DR. JOHN N. HURTY, *Secretary of Committee of Arrangements.*

INDIANAPOLIS, Ind.

The Twenty-Eighth Annual Meeting will be held in Indianapolis, Indiana, beginning October 22 and continuing until October 26, 1900.

The Executive Committee has selected the following topics for consideration: Pollution of Public Water Supplies; Disposal of Refuse Material; Animal Diseases and Animal Food; Car Sanitation; Etiology of Yellow Fever; Steamship and Steamboat Sanitation; Relation of Forestry to the Public Health; Demography and Statistics in Their Sanitary Relation; Cause and Prevention of Infectious Diseases; Public Health Legislation; The Duration of Infectious Diseases; Cause and Prevention of Infant Mortality; Disinfectants; Municipal Sanitary Administration; To Define What Constitutes an Epidemic; On National Leper Home; Dangers to the Public Health from Illuminating and Fuel Gas; Revision of Bertillon Classification of Causes of Death; Transportation of Diseased Tissue by Mail; The Teaching of Hygiene and Granting of Degrees of Doctor of Public Health.

Section of Bacteriology and Chemistry.

1. Standard methods of water analysis, Bacteriological and Chemical; (2) Laboratory studies on the use of preservatives in food supplies, and (3) contributions to a discussion on diphtheria from a laboratory point of view. DR. THEOBALD SMITH,
Chairman, Boston, Mass.

THE SANITARIAN.

NOVEMBER, 1900.

NUMBER 372.

OUR RACE AND CONSUMPTION.*

By SIR JAMES GRANT.

The problem, of all others staring us in the face, is what course of action is most judicious to stay the spread of consumption. So alarming are the present results that conferences are being held on this subject in the most enlightened centers of the world. History points out that no race of human kind has yet obtained a permanent foothold upon this continent. The Asiatics trace back their life history so far that it is like a geologic epoch. Those who descended from the Ptolemys are still found cultivating the rich alluvial banks of the Nile. The race that peopled Northern Europe when Greece and Rome were in their infancy still retains its hold and exercises a powerful influence throughout the world. An important fact, and one worthy of consideration, is, that races have been born on this continent, lived, and entirely disappeared, leaving as records of their past history, mounds in the west, vestiges in Florida, and traces in other directions which give an undoubted indication of at least two extinct races. Thus far the information is wanting which would clear up the causes why these races have entirely disappeared. It now remains to be seen if the Anglo-Saxon race will prove itself equal to the occasion and be more fortunate in establishing a more lasting foothold on this continent. Climate and civilization require a physique and brain-power equal to the occasion to meet successfully the trying demands of the present age. The enthusiasm of the Canadian people to assist in the protection of British interests in South Africa was placed beyond doubt by the rapid equipment of fully 3,000 men, who entered the field and displayed bravery

*Read at the meeting of the Canadian Medical Association, Ottawa, September 12, 1900.

not surpassed in the history of the empire. True, as a result, many valuable lives have been lost by the sword and disease, but as to numbers it is most appalling to reflect upon the fact that over 3,000 lives were lost in the fair province of Ontario in 1898 by consumption alone, and yet our people are not aroused as to this great fatality, now assuming such alarming proportions. It is undoubted that the seeds of this disease lurk in our country, our homes, our places of business, the food we eat, the water and the milk we drink, and frequently the very air we breathe, thus encircling us by an enemy spreading disease fatal in its results, and producing a most disastrous influence on the present generation. As a profession, what course should we adopt under present circumstances? It is our duty to guide and direct public opinion as far as possible, in order to place the whole subject in a clear and comprehensive form, so that common sense and co-operation may be aroused and an active interest taken by all classes of the community—fathers and mothers, councilors and legislators—to stay as far as possible the alarming spread of consumption, now termed the "white plague." For many years medical opinion was divided as to the communicability of the poison of tuberculosis, but we are all contagionists now, since the remarkable discovery of Dr. Koch in 1882 that consumption of the lungs was one of the most frequent forms of tuberculosis, and solely caused by the introduction of a living germ, the bacillus tuberculosis, into the system of a previously healthy person. To-day his theories are accepted and verified that tuberculosis is a communicable and preventable disease, two facts which cannot be too strongly impressed on the public mind. The question of heredity is the one which for many years was the accepted opinion, exercising as it did a soothing influence as to the prospect of escape from consumption under such circumstances. Nothing is now more certain or conclusive than that no one does or can inherit consumption. The offspring of consumptive parents receive the infection from without before they can become consumptives, thus giving fresh hope and spirit to the parents known to be consumptive.

FINDINGS OF ROYAL COMMISSIONS.

In 1888 and 1890 two British royal commissions were appointed to make investigations in regard to tuberculosis, and the result of their deliberations was as follows:

1. That consumption is a contagious disease.

2. That contagion is in the form of a living germ.

3. This living germ can grow and propagate only in the body of man or some of the lower animals.

4. The principal source of infection is the dried sputa, from the lungs of persons already suffering from the disease; the sputa becoming dry, the tubercle germs float as particles of dust in the air, and are thus inhaled.

5. The other source of infection to man is from eating the flesh and drinking the milk of tuberculous cattle. Cooked meat destroys infection and is not as dangerous as raw milk, containing tuberculous matter, and more particularly if the animal has well-defined ulcerated udders.

TUBERCULOUS MILK.

Dr. Clifford Allbutt has published (British Med. Journal, Oct. 28, '99) the opinion that there are instances of the prolonged use of tuberculous milk by many persons, old and young, without ill consequences, and this immunity depends on the constancy of the defensive machinery of the body. In 1896 a third British commission was appointed, composed of eminent medical men and veterinary surgeons, to inquire into the means most advisable and desirable for controlling the danger to man through the use, as food, of the meat and milk of tuberculous animals. The housing and general sanitation of cattle require special care and attention. Tuberculin advised free by government to all owners of cattle, so that their herds could be examined at stated intervals by the tuberculin test. The animals infected should be treated according to the most advanced principles, either as to isolation or killing of same. Local authorities to take samples of milk offered for sale within their districts and vendors required to give information of the source from which the milk is supplied. These methods are now in force in England to assist in stamping out bovine tuberculosis and protecting the public as far as infection is concerned. The tuberculin test has been the subject of considerable controversy and the following facts should be kept well in hand:

TUBERCULIN TEST.

Dr. Watson, president of the State Board of Cattle Commissioners, Concord, N. H., in the public health report, 1898, vol. 24,

p. 149, states: "We believe that a majority of the cattle reacting to the tuberculin test are not diseased to an extent that requires their slaughter for the protection of public health." The policy of slaughtering all animals that reacted to tuberculin has been entirely abandoned, as after the most careful inquiry it is believed that a majority of the cattle reacted on by the tuberculin test are not diseased to an extent that requires their slaughtering for the protection of the public health. Much depends on the careful and thorough physical examination by skilled veterinary surgeons, as thus the danger of infection from either tuberculous meat or milk would be reduced to a minimum. Tuberculin does not reveal the degree of infection and is actually not as reliable a test as was at first supposed. Salomon, in 1893 (Transac. American Public Health Association), admitted that tuberculin was a great aid to diagnosis of tuberculosis, but not infallible and may lead to errors. There are instances on record where tuberculosis existed, and the animals did not react to tuberculin. In all such investigations, in order to promote health in cattle as well as man, the opinion arrived at by the highest authority is that sanitation ranks first. Dairymen should be registered and an inspector appointed for a specified area of country, to be under the control of the local government in a provincial bureau of cattle commissioners, to make reports at stated intervals, as well as issue printed circular directions to dairymen, milk vendors and cattle dealers for their guidance and general direction, and all animals for food supply should be inspected before sold. Some such system carried into effect in Canada would reduce tuberculosis to a minimum, and do much to strengthen the belief that our Dominion is a centre of health, happiness and prosperity. Too much stress cannot be placed on these facts, in order that the public as a whole may be aroused to the great importance of a general knowledge of the subject, as such would in time give direction to governmental and special efforts of scientists, who should not be single-handed in public health efforts. In May, 1900, the Regius professors of Oxford and Cambridge spoke with all the responsibility of their office on the communicability of consumption and its prevention, fully impressed with the fact that from 65,000 to 70,000 die annually in Great Britain from this disease, more than double the fatality of the entire British force at present in South Africa.

Clifford Allbutt epitomized the preventive measures: An active usade against three d's—damp, darkness and dirt. In clearing

the board of these evils the standard of general health would be raised to a higher level, and what is needed in Canada is thorough organization.

At the last session (Ontario) a permissive bill was unanimously passed, the result of the labors of the Anti-Consumptive League, Toronto, providing for the erection and maintenance of a sanatorium for consumptives in each municipality, or group of municipalities, in the province of Ontario. This is a most progressive move, in keeping with the advancement of our day, and one which reflects much credit on the local authorities of Ontario.

The history of medical opinion as to the communicability of tuberculosis is somewhat remarkable. Villemin was ridiculed, as to his ideas of infection, but we are all contagionists now, and Villemin's name stands out as one of the greatest men of his time; a true scientist in the widest and most comprehensive sense. Considering the antiquity of the contagious belief, as to consumption, it is remarkable the length of time that elapsed before active measures were thought of to stay the progress of this disease. The contagiousness of consumption was known to Aristotle, who stated the breath of consumptives was poisonous to those about them. In the second century Galen announced the very same idea, and warned the people it was dangerous to live intimately with the sufferers from consumption. In the fifteenth and sixteenth centuries Baillon, a celebrated French physician, and Mantano, observed the frequency of consumption in those who attended phthisical patients.

In 1682 the celebrated Morgagni expressed the same opinion. At Nancy, in 1750, the furniture of a woman who died of consumption was publicly burnt by order of the magistrates. In 1754 the Grand Duke of Tuscany sought council from the Florence College of Physicians as to the infectiousness of consumption, and a legislative enactment for the prevention of consumption was issued in 1782 by Frederick IV., King of Naples. Thus in the medical history of Europe we are enabled by records to trace every marked activity in the line of defense against the infectious character of consumption. Not, however, until the remarkable discovery of Koch, were scientists at rest as to the origin and precise nature of this disease, which has an average of about one-seventh of all deaths, of whatever nature, and a fatality about three times as great as all other contagious diseases combined. At present, fully twelve years since Koch's discovery, we find tuberculosis recorded in tabulated lists of disease, as con-

tagious, and certainly it is high time so progressive a move should be made. The remarkable fatality from tuberculosis leads to the belief that its latent power is more active than generally supposed. The one great source of contagion is the sputa of the consumptive patient, and particularly in its dried state. Fortunately all who inhale or ingest tubercle germs do not contract consumption. Much depends on a lowered state of the system, rendering it fit soil for its development. The very surroundings of the individual limit greatly the infectious character of this disease. Much as to immunity from consumption depends on care, prudence and watchfulness exercised to promote a healthy state of the system and to counteract any disposition toward a lowering of normal vitality, by careful observation and action, both as to external conditions or surroundings and the internal workings of the system, the very fortifications set up by Nature to guide, direct and preserve health. All interested in tuberculosis should be alive to the fact that it is a preventable disease, and as a most desirable precaution against its spread, those laboring under the disease should use a metal sputa cup which, with contents, can be thoroughly boiled, and thus act against infection. Strict quarantine should be exercised against the importation of foreign consumptives. Connecticut Medical Society report, 1899, states: "Every building where large gatherings frequent becomes a source of danger, unless precautions are used, for where can a large gathering be found that some consumptive does not frequent? Theatres, churches, school rooms, with vitiated air, and packed doors; our homes, where consumptives live; the mill, the office, the sleeping car, hotels and cottages, in all health resorts, where consumptives congregate, and even the public telephone and drinking cup may become sources of infection. Ship owners should be careful that berths holding several passengers should not have even one of these a consumptive.

THOUSANDS MAY BE SAVED.

Once our people are aroused to the fact that thousands die annually who might have been saved by preventable means, then timely care will be taken, and the necessary measures carried out to reduce the death rate to the smallest margin possible. As to the medicinal treatment the opinion now prevails we have no specific for consumption. Dr. Bodingten, of Sutton, Coldfield, Eng., was the first to advocate the open air treatment of con-

sumption, and in this line of action, Dr. Henry Bennett, of Edinburgh, advocated vigorously the open air treatment, Riviera. To the fresh air life, liberal feeding was added, and in this line Hugh Bennett was quite noted for the free administration of cod liver oil. The Adirondack Cottage Sanitarium, for the treatment of incipient pulmonary tuberculosis, under Dr. Trudeau, has accomplished much good and practical work. In round numbers the results from all sanitoria, the only safe method of treatment, is estimated at about one-third cured, of those who remained a reasonable term, from three to nine months, and what can be more satisfactory than the fact that absolute cures do occur? Sanitoria for consumptives are the order of the day, and we most earnestly trust that such action will be taken by the authorities in our Dominion as will command the respect of the public and the profession. Marked increased activity is evident on this subject, indicated by the congresses held in various parts of the world. Last year Berlin had a most successful meeting, at which Canada was represented by Dr. Farrel, of Halifax, to whom we are indebted for an excellent report. This year Naples has been up and doing, and next year (1901) the wisdom of the nation and outside world will assemble in London under the presidency of H. R. H. the Prince of Wales.

THE PRACTICAL OUTCOME.

If we inquire into the practical outcome so far, what have we to state—that many able speeches have been delivered and much enthusiasm excited. Resolutions were passed, associations formed and the state called upon as to the requisite machinery for carrying out the necessary sanitary measures. Lord Salisbury, at Marlborough House meeting in 1898, said: "You must be content with preaching the salutary doctrine you hold, and must not think of applying it with the secular avow." So now in England the protection of the people in these matters of health actually rests with the municipal and local authorities. In Italy, fortunately, matters are somewhat different. Professor Baccelli, who also is an authority as statesman and scientist, and as president of the congress at Naples, announced that the Italian government prepared a law concerning the prophylaxis of infectious diseases, in which tuberculosis figures conspicuously. Persuasion alone is not sufficient, but compulsion as well. We shall look forward with much interest to the outcome of this progressive meas-

ure under the guidance of so eminent an authority. The education of our people as to the methods necessary to counteract the spread of tuberculosis would assist materially all other efforts in the same direction. In the school, the church, the councils, and, in fact, in every possible way, effort should be made to inform the masses as to the vast moment of this serious malady and as to the manner in which their united co-operation would prove of service. Tuberculosis has become a really national disease, and is widely spread. The Provincial Bureau of Public Health doubtless will have an increased appropriation, and additional special experts on this disease, that every means should be taken to stay the progress of tuberculosis, without which our efforts would be futile and the results anything but satisfactory. A central bureau of health cannot be thoroughly equipped without a chemical and bacteriological laboratory. Such are indispensable in the present advanced state of science. The Dominion of Canada indicates a vigorous and healthy growth in this direction. Meetings like the present tend to develop and strengthen the power of public opinion in aid of the cause of science, and we trust that by judicious enterprise and intelligent energy the practical result will be that the soil of tuberculosis will rapidly disappear, and cause Canada to be known as the Riviera of the North American continent.

The eloquent address of Sir James was followed by the report of a special committee embodying the views of the association, which will be sent to the premiers of the provinces and Sir Wilfrid Laurier.

THE HYGIENE OF CHILDREN'S SLEEPING APARTMENTS.

By Joseph Byrne, A.M., M.D.,

Clinical Assistant, Department of Diseases of Children, Vanderbilt Clinic, New York.

The hygiene of sleeping apartments is an old subject. It has been touched by able hands in the past, but the benefactors who raised their voices in behalf of the poor have passed on disregarded and unthanked, to find in other quarters clients who are better prepared to receive and appreciate such advice, but also perhaps less in need of it. The children of the poor still spend half

their lives in dismal, unhealthy sleeping apartments. This is sufficient excuse for the present writer.

The following remarks are the result of daily observations made on the habitations of the working people of the west side. They are by no means the poorest and worst off portion of our people. The writer's experience with the latter class has been limited, but he has seen enough to make him wonder why the State cannot, by virtue of its police power, put an end to such a condition of affairs, just as it confiscates bad food and pulls down dangerous buildings.

When the physician is called to a sick child there is usually a little fuss made over "the doctor." He is ushered into the best room in the house, whither the child is brought screaming and terrified. This is a reprehensible practice. It is better for the physician to insist on being allowed to enter the child's room quietly and unannounced. This will give him an idea of the child's condition in repose. On entering the room the heavy odor of impure air is the first thing noticed. There is generally great difficulty in finding the little patient until one's eyes become accustomed to the darkness, and then one is likely to find him hidden in a corner of a huge bed that almost completely fills the room. The size of this bed is significant, for if one calls at night it will be found that the bed is taxed to its utmost capacity with occupants. The writer is by no means of the timorous kind, yet he has never entered one of those dark "middle rooms" without serious misgivings. Sunlight is shut out, pure air cut off, there is one way of entrance and exit, without room to turn. It gives the impression of a dungeon in the old European castles, and, everything considered, the writer would prefer to take chances with his patient in one of these same old castle-dungeons than he would in one of these tenement middle rooms.

This deficiency in cubic space to the exclusion of light and air is deplorable. The need of fresh air in sleeping apartments has been much insisted upon, but not sufficiently so in the case of children. The amount of work done by children running about in daytime, the metabolic activity of their growing bodies, their mental activity, the access of new impressions, the deficiency of control in the higher centres which have not as yet acquired their full mastery—all demand oxygen most imperatively during the hours of repose, when the work of reconstruction is going on and the exhausted neurons are recovering strength and substance. Adenoids and nasal obstructions enhance the pernicious influence of deficient

cubic space, and are themselves in turn aggravated and perhaps sometimes caused by it. The writer has had many opportunities to observe children sleeping in such narrow apartments. The children were always restless, though hard to be aroused. They were generally dreaming and muttering, and oftentimes writhing in convulsions. On one occasion three children were observed in the same bed. The oldest was a girl of ten. She seemed to sleep soundly. The other children, aged two and four, respectively, slept restlessly with the mouth widely open. They muttered constantly and tossed their heads from side to side, and finally became rigid from head to foot, evidently convulsed. This condition lasted from one to three minutes. The children slept (?) all through the attack which was repeated in one of them inside of half an hour.

It is said that horses, if they are not allowed proper time for rest, will sleep while being driven. Many a poor man's child does at school practically what the overworked horse does, and gets punished for it. A visit to the school-room is always interesting to the physician. He is sure to find some tired children whom the teacher would doubtless pronounce lazy. If these children be observed they will be found pale and stupid-looking; mouth-breathers, perhaps suffering from nasal obstruction. Through no fault of theirs, they are deficient in mind and body, and they are whipped for it in the name of progress and education. Was there ever a grosser injustice?

A little boy runs around and tosses and tumbles in daytime until at night he is exhausted and sleep and rest are needed. Then he is put into a crowded, dark, stuffy room to pass the night in a restless, semi-stuporous condition, tortured by dreams and nightmares. Is it any wonder that such children are deficient in intellect? When health, food and comfort come to other children without effort, as the bloom comes to the flower, it is easy for them to develop their minds, but beside these we have the wretched children of the poor who seize their only opportunity to get in the schoolroom the much-needed rest and air for their exhausted little bodies. To urge such children is a crime of our own making and toleration. We are advancing civilization at a terrible sacrifice. But now that there are physicians to superintend schools it is to be hoped that they will do their duty by these little martyrs.

The difficulty of ventilating the windowless middle room is apparent, but sometimes mothers triumphantly point out that the door of the adjoining room is left open with nothing separating

the rooms but a curtain. Now even a *portiére* has a wonderful effect in deadening air currents which are so essential to ventilation. Moreover, the air in the next room is generally but too scant to supply the demand of its own occupants.

Many apartments on the west side consist of three rooms. One, the largest and best lighted, is set aside for a parlor. Next to this room comes the kitchen. Off the kitchen we find the middle room dungeon. This arrangement delights many people. It is so warm and comfortable! The fire in the kitchen is so convenient! How long will it take people to realize that pure air, be it hot or cold, is not of itself dangerous; and that impure air, like impure water, be it ever so clear and grateful to the palate, carries disease and death?

This proximity of the kitchen stove is a dangerous condition. Stoves of the American variety have been pronounced by high American authority to be "an abomination." It is well known that our present means of utilizing coal for heating purposes is rather extravagant, for at best by direct combustion we can turn to advantage only about 3 per cent. of the energy available. The stove has been hailed as an economizer. All appreciate the necessity of economy in coal, but it is a matter of regret that science has as yet not been able to economize by securing a more complete combustion in the stove. It is in this incompleteness of combustion that the great objection is to be found to stoves.

The chemistry of the combustion of anthracite coal may be represented in two steps, thus:

$$C_2 + O_2 = {}_2\,CO$$

This represents the incomplete combustion that too frequently occurs with the carbon monoxide which is a poisonous gas. If there be time and heat sufficient and oxygen available the process continues, and we get the carbon monoxide uniting with more oxygen to complete the combustion, with a harmless product, carbon dioxide, thus:

$${}_2\,CO + O_2 = {}_2\,CO_2$$

With our present methods it always happens that combustion is more or less incomplete. If now we are dealing with a self-feeder or one of those big drum stoves such as one sees at country railroad depots or at elevated stations in this city, much of this carbon monoxide escapes into the room. If there be a damper, as there usually is, it will make the amount that escapes all the more. The same escape takes place in kitchen stoves when the damper is turned on or the covers removed "to shake the fire."

The effects of such economy unfortunately can only be adequately appreciated by the physician. It is true that in the elevated stations one frequently meets the treacherous odor of this deadly blood-poison, but the fears of the people are allayed if they see a couple of pints of water on the stove to "absorb the gas." It is unfortunate that carbon monoxide has not the color of nitrous oxide fumes, for then the people might recognize more readily the presence of this injurious substance.

A word about the effects of carbon monoxide. Like oxygen, this gas unites with the hemoglobin of the red blood cell, but unlike oxygen it forms a stable compound with it, thereby rendering the cell for ever after incapable of performing its chief function of oxygen carrier between the lungs and the tissues. It permanently paralyzes the red cell. Further comment is unnecessary. If the poisoning continues anemia, ill-health and death directly or indirectly must ensue. The importance of the partial combustion of coal should be readily appreciated, more especially in the small, poorly ventilated apartments of the poor. Children not only suffer from a lack of pure air, but also from a positive destructive agent in the form of carbon monoxide.

Apropos of the subject of stoves, a word about gas stoves. It appears that for once our generous medical brethren have forgotten to avail themselves of an opportunity to do a lasting service to an ever ungrateful public. It can hardly seem possible that gas stoves have been making such headway, insinuating themselves into homes, destroying the health of the people, and that the medical profession even at the late hour has not been up in arms making war on them.

The gas stove as a heater has many drawbacks. It is a great consumer of oxygen, besides discharging its products of combustion into the air that we breathe. It is bad enough for us to have to breathe over and over again the same air under poor conditions of ventilation, but here we have to breathe second-hand air after the insatiable gas stove. Moreover, coal gas is poisonous, as can be seen from its popularity as a means of suicide. Carbon monoxide is one of its constituents, and we have much to dread from its escape through defective tubing or from its running the gauntlet of the burners unconsumed. The writer has seen cases of anemia in children that proved very obstinate until the gas stove was removed from the rooms in which they slept, when recovery was prompt.

Many things might perhaps be urged in favor of the gas stove,

but as a heater of apartments and in its present form it is little short of murderous.

Sleeping apartments should not be swept while patients occupy them. Sweeping is at best, but a poor way of removing dirt and dust from rooms and is always dangerous. The better method is to go over the floor and furniture in the early morning with a moist cloth, which can be afterwards boiled. This is the simple and scientific way of removing dust and dirt and at the present time the best and most practical.

Doubtless many practitioners have found, like the writer, that as soon as a member of a family living in the tenement districts has recovered or died from a contagious disease, and almost before the Health Board has gone through the ceremony of disinfection, the people pack up and move to other quarters. Then new unsuspecting tenants move into the recently disinfected premises, only to wonder in the course of a few weeks where on earth their child could have contracted scarlet fever or diphtheria. The Health Board, do what it may, can never hope to effectively disinfect premises while they are occupied. The old sulphur method is but a hollow ceremony at best. Now, with all due deference, the writer begs to offer a suggestion. Since it is impossible to disinfect a house while it is occupied, why should not the Health Board make a thorough attempt at disinfection by entering every house or set of apartments when they are vacated by moving parties and thoroughly disinfecting the premises with the most effective means possible? Then every nook and cranny can be reached. There will be no objection on the part of the people, and the delay of a few hours will be well repaid.

It would greatly assist the Health Board if the people were informed that it is the duty of a landlord to inform prospective tenants if a member of the previous tenant's family had been afflicted with a contagious disease, and that in case the landlord failed to make such disclosure the tenant would have a cause of action against his landlord in case he or any member of his family thereby contracted disease and suffered loss.

The best cure of disease is its prevention. The method of disinfection suggested seems practical, and no expense should be spared in order to strike an effective blow at the great scourges of infancy and childhood.

The conclusions to be reached are:

1. Windowless middle rooms should be abolished.
2. The best room in the house should be used as the bedroom.

3. Bedrooms should be properly ventilated during the night.

4. Bedrooms should not be swept, but mopped with a moist cloth.

5. Kitchen and gas stoves are to be reckoned with no less than adenoids and nasal obstructions in treating various diseases of infancy and childhood.

6. Backward children should be protected by the physician.

The purpose of these remarks will have been fulfilled if they help the practitioner to remember the sleeping apartment in treating the diseases of childhood, and above all, if they help him to do his whole duty by the poor, for the little they give us comes to them hard. He may not be heeded nor thanked for it, but surely it is worthy of the noblest intellect amongst us to endeavor to fulfill his mission, by preaching and practising the gospel of science and health.—Pediatrics, March 15, 1900.

THE CASH VALUE OF AN INFANT'S LIFE.

Are more than nominal damages recoverable for the negligent killing of an infant incapable of earning anything, without direct evidence of pecuniary damage other than sex, age, and condition of health of the infant at the time? This was the contested question presented to the Supreme Court of North Carolina by the case of Russell vs. The Windsor Steamboat Company. Here, a male child five months old had been killed by the alleged negligence of the company, and the father brought this action to recover damages. However, he did not try to enforce the common law remedy, to which the court says that he would probably have been entitled, of an action based upon a loss of services. Instead, he sued as administrator, under the North Carolina statute, which does not regard the family relation, but gives the cause of action to the personal representative of the deceased, without distinction as to age. Thus, the case was made purely and simply one to recover the net value of the child's life—not what his services might have been worth to some one else during his minority, but what his entire life would have been worth to himself, had he lived. In other words, this action was brought just as it would have been had the one killed been of adult age. Now, suppose, says the court, that the child had survived, but as a cripple, condemned to

a life of dependence, and perhaps of pain, could he not have recovered damages in a suit by his next friend? If so, could not his personal representative recover them under the statute mentioned? The court holds that he could. It declares that it sees no distinction in the law, nor reason for distinction, between the death of a child and of an adult. The measure of damages is the same, though, it is frankly admitted, the difficulty of its application is greatly increased in the case of an infant. Still, the court continues, the jury must do the best they can; taking into consideration all the circumstances surrounding the life that is lost, and relying upon their common knowledge and common sense to determine the weight and effect of the evidence. Where life is lost by reason of the actionable negligence of another, the measure of damages, it holds, is the present value of the net pecuniary worth of the life of the deceased, to be ascertained by deducting the probable cost of his own living from the probable gross income derived from his own exertions, based upon his life expectancy. The expectancy of an infant of five months, it adds, is a matter of habits. Then, the court says, there is another view of the question which forces itself upon its mind. This, perhaps, it was not called upon to consider; but, unless forced to do so by the overwhelming weight of authority or the inexorable logic of legal conclusion, it insists that it would be reluctant to admit that a human life, however lowly or feeble, had no value, in the contemplation of a common carrier. Even a new-born colt or calf has an actual value, entirely dependent upon its future usefulness or salability. The court also says that it is a matter of common knowledge that during the days of slavery a healthy negro child, even at the breast, was considered as worth at least $100. It then suggests that this contrast be considered. A helpless negro baby, lying upon the floor along which he could not crawl, and born to a state of hopeless bondage, was worth to the owner at least $100 as a chattel; and yet another baby, with generations of inherent qualities behind him, and the magnificent possibilities of American citizenship before him, is not worth to himself, or to the country whose destinies he might one day have shaped, even the penny necessary to carry the costs. This view the court pronounces entirely too incongruous to strike its fancy. Wherefore, it holds that the plaintiff was entitled to recover substantial damages, and affirms a judgment in his favor for $1000.—*Jour. A. M. A.*, Sept. 22, 1900.

THE MATERNAL INSTINCT AND THE GENESIS OF MORALITY.

Since Abraham showed himself ready to offer in sacrifice that one best thing in all the world which he possessed—a son—and since Cornelia, the patriotic mother of the Gracchi, tendered the Roman consul three lusty sons as jewels consecrated to her country's need, the honors of parentage have ever received mankind's best homage and respect. Napoleon Bonaparte, the Corsican ogre, though animated by a consuming egotism and an untiring ambition which permitted nothing to stand in their way, and who aspired to weld all Europe into one great kingdom of which he himself should be the chief ruler and dictator, felt himself obliged to confess, after more victories in the field than ever fell to the lot of any one fighter, that it was the gentle hand that rocked the cradle that ruled the world, rather than the strong arm of the mailed warrior, and when asked what was the greatest need of France in his day, could find no reply except the sacred word, mothers.

It may safely be said, even in these days of the new woman who is so exercised about her rights, and of her flamboyant coadjudtors who seem to be animated largely by a desire to make themselves conspicuous, that the maternal instinct confers the most valuable right which any woman, no matter how advancel, can possess; and as one writer—and that, too, a woman—has said: no woman who does not possess it can be good for anything worth mentioning in any walk of life.

As the dawn of reason plainly shines forth in qualities and traits seen in creatures low in the scale of being, so the genesis of morality is to be sought in certain tendencies or capabilities possessed by the lower animals.

It is a somewhat remarkable fact that while almost everybody in civilized society has some idea of the requirements of morality, and that while all of us make some attempt to regulate our lives in accordance with its tenets; yet, neither in the past nor at the present time, have men been able to define what morality really is, except in a very general way, or to agree upon the basis on which the sense of moral responsibility rests.

A few years ago the Woman's Christian Temperance Union insisted that Morality should be taught in the public schools, as well as in the home and in the Sunday school. In order to systematize the study so that it should be available for use in a text book, it became necessary to define just what morality was. This seemed at first thought to be easy enough, but it was found on actual attempt to be a well-nigh hopeless task. The question was studied for about four years by the Evangelical Ministers' Association of Boston, and then the committee—Dr. Joseph T. Duryea and Rev. Edward Everett Hale—reported as follows: "Difficulties have been met and not overcome—we are trying to evade them. * * * The committee have seriously doubted the wisdom of debating the basis of moral choice and action before youth. To show them that apparently good men differ concerning the very foundation of morality might be harmful, before they are developed and informed sufficiently to understand how there can be differences as to theories, and yet substantial agreement as to practical morality." These earnest and conscientious men declared that they could not formulate the principles of morality in such a way that they could be safely presented to children. The result of this whole investigation was to give us to understand that the test of morality is in doing rather than saying, and that it must be taught to undeveloped minds by example and cannot safely be presented by precept. The home is the safest place in which to inculcate the principles of morality. If it is taught there it does not need to be taught in the public schools. If its foundation is not laid in the home, its superstructure can hardly be builded in the school or the church.

It is worthy of note at this point that while we of the nineteenth century seem to have decided that the best place to develop the moral sentiments is in the home, we also have been forced to conclude, as we shall attempt to show, that the home was the place in which they undoubtedly originated.

When the Great Teacher taught upon earth, He laid especial stress on two things—man's relations and duties to his Creator, and man's relations and duties to his fellows—and he at least intimated that these two things were bound up in each other. Now morality, speaking non ex cathedra, covers the duties which man owes to his fellows, and its tenets when carried out will enable a man to be of the best use to his neighbors, and will tend to develop him so that he will become a being finding his fullest life and his greatest happiness in living for others rather than for him-

self alone. Selfishness is the one great curse which afflicts mankind. It lies at the bottom of all the evil in the world. So long as a man is saturated with selfishness, he can do his duty neither to his God, nor to his fellows, nor to himself. All of us would, perhaps be surprised if we should attempt to analyze the true animus of most of the actions which we call good deeds, to find to how great an extent they are inspired by self-interest. The one great object of Christian morality is to eradicate, so far as may be, this Frankenstein monster of selfishness.

By studying the theory of evolution we come to a very clear idea of how man came to be characterized by egotism. The law of natural selection or of the survival of the fittest, was, upon the surface, a very hard and cruel law, but yet, great good resulted from its working. So great was the relative increase of all animal life over the supply of food, that life became a hard, cruel, conflict waged continually for the mere means of subsistence. In the great stress for sustenance, each animal could only look out for himself. So great was the struggle to obtain food, that as a result only the strongest and best physical specimens could obtain it, and consequently be able to survive. All weak creatures died off, thus leaving only the strong and healthy to reproduce their kind. Primitive man contended with wild beasts, and with his wild companions for his food and shelter. He was under the same stress as the brutes to obtain sustenance. In short, selfishness seems to be the one legacy which civilized man has inherited from his brute ancestors, and from his semi-human progenitors.

We find, however, in looking over the field of the working of the law of natural selection that it was not always the strongest which survived. It might be those which were fleetest and could escape their carnivorous enemies by flight. The buffalo and deer both belong to the same species. They both descended from some common stock. Among the common progenitors of the buffalo and deer families, some individuals were fleeter than others. Such fleet individuals by trusting to their speed, as a means of escaping from enemies, became swifter and swifter (because only the swiftest could survive) and were finally evolved into the deer family. How were the buffaloes evolved? Well, those individuals among the common progenitors which were not swift enough to escape their enemies by flight, were compelled by necessity to stand and fight them. They thus became stronger and stronger, until the buffalo, an herbivora which is able to hold its own in fight against the lion, the fiercest of the carnivora, was

evolved. Natural selection seem to seize upon that quality in an animal, the development of which is of the most importance to the species, and as a result that quality is evolved to the fullest extent. This is what has made deer and horses fleet, and lions and buffaloes strong.

Further, in the great struggle for existence, some animals relied neither upon their speed nor their strength, but upon their cunning. Creatures which depend upon this quality for the preservation of their lives are much more sagacious than those depending on strength or speed. The lion and the tiger both belong to the same feline family, but they are very different in their habits. Among the common progenitors of these carnivora some were stronger than others. The strong came to depend entirely upon their strength as a means of gaining food, and finally were evolved into lions, animals which meet their enemies out in the open and fight them face to face. The weaker ones were driven to rely on cunning rather than strength, and became more and more sagacious. They hid themselves and laid in wait for their prey. In course of time, by the development of such qualities, a tiger resulted. The essential difference between a lion and a tiger is that one is strong and bold and the other less strong but more cunning.

We have now caught a glimpse of the fact that the law of natural selection, seizing upon such variations as naturally occur, through its working has exerted a mighty influence toward the development and advance of all the lower animals. Now man—the crown and masterwork of the whole evolutionary process—has been evolved by the gradual development of qualities, traces of which are to be found in animals quite low in the scale of organization. Ants, birds, dogs, horses, elephants and apes show evidences of possessing something very akin to reasoning power. By the continued development of such like qualities to their fullest extent, through the action of this well-known law of the survival of the fittest, intellectual man has finally appeared on the stage. Primitive man was the essence of the strength, the swiftness, the cunning, the sagacity, the prudence, the ingenuity, the reasoning powers, etc., of his long line of animal ancestors, all developed to the greatest extent.

All these qualities and more a man possesses, for man is something greater than all this. When did the moral sense dawn in man? This is a question the tracing of which is beset by many difficulties and involved in the greatest obscurity. If then, we

can catch a glimpse of its evolution, we shall have to be satisfied. We have already seen that the law of natural selection has been the power which has brought about most of the advance in the animal kingdom. "Natural selection keeps up the adjustments which tend to maintain the highest fullness of life." We have also seen that through the workings of this law man has inherited a burden of selfish propensities. Now, the first evidence of a moral sentiment which we perceive in looking over the whole field is when certain animals show traces of qualities which tend to unloose the hard, cruel bond under which a creature lives for himself alone.

The polyp is about the lowest of living creatures. He is merely an organized digestive sac. He eats and breathes. Turn him wrong side out and he keeps on digesting. He has no brain and only a rudimentary nervous system. He reproduces himself by a process of budding, and his offspring shift for themselves as soon as born. The maternal instinct is lacking and there is no dependence of the young upon the parents. Now the evolution of the moral sense has been closely connected with two processes,—the development of parental love, and the appearance of a more or less prolonged period of helplessness in the young, called the period of infancy, during which the offspring are dependent on the parents for care. These two processes have been mutually reactive upon each other, and have resulted in the establishment of a permanent home. The lowest orders of animals show little evilence of possessing a maternal or paternal instinct, but when we come to birds, we find that they are usually monogamous, though they mate for only one season, and that parental love is strong while it lasts, though of short duration. Birds provide a home for their young and care for them through a period of helpless infancy more or less prolonged. In mammals the instinct of maternal love becomes stronger and stronger as we rise in the scale. Whales, dogs, horses and elephants have their offspring under parental care for quite long periods. When we arrive at the man-like apes we find that they establish a home and care for their babies through a periol of infancy extending over several months, during which the infant lies helpless, unable to feed himself, or to walk, or to grasp objects with precision. Traces of the possession of still higher moral sentiments are found in apes. Sympathy of a rudimentary sort is shown by baboons, who often risk their own lives in order to rescue a companion from danger. The anthropoid apes habitually adopt, and protect and feed, the

young orphans of their own species. Parental love is manifested not alone toward their own young but also toward the offspring of others. Here is another step away from heartless selfishness towards moral self-sacrifice for the good of others.

We have already seen that the lowest orders of animals possess no brain and that with them there is no period of infancy. As we trace the evolutionary process upward we find the cerebrum becoming more and more enlarged, and, of course, the mental faculties increasing *pari passu.* There came a time when the possession of mental faculties and of the parental instinct was of more consequence to the good of the species than other qualities, and then the law of natural selection came into play and only those survived and reproduced themselves which were best endowed in these directions. We also find what at first sight we should perhaps hardly expect, that the higher the animal is in the scale of cerebral development the more helpless are its progeny at birth and the more prolonged becomes the period of infancy. Now why is this?

The polyp's life consists entirely in performing a few simple, reflex acts over and over again. He eats and breathes, and reproduces himself. This is his life, and this is the life of all the lowest orders of animal life. Now such simple functions are performed without any aid or direction from the higher cerebral centres. The young of every animated creature, from the tadpole up to man, can digest and breathe as well the first day after birth as at any time during their existence. An animal whose whole life consists of such simple functions is never helpless, for his life is narrow and his environment small. The offspring of such can immediately take care of themselves and consequently there is no period of infancy. But when we arrive at creatures whose cerebral development is considerable and whose life is fuller and whose environment is more extensive, then we find life dominated more and more by the higher faculties until we arrive at man, who has become the ruler of all animated nature through the development of his intellect; and whose life is the fullest possible, and whose environment extends almost to infinity. So complicated and extensive has man's cerebrum become that it cannot become fully organized at birth. The period of gestation is only long enough to provide for the organization of his lower and purely physical organs. The organization and development of his cerebrum, with its intellectual faculties, is accordingly accomplished after birth, and has resulted in a prolonged period of infancy.

We have now caught a glimpse of the possible germ from which sprung the parental affections through evolution from the maternal instinct, and we have also got some insight into the reason why the period of infancy has become so prolonged. These two processes, which are mutually reactive, have brought about the founding of the permanent home. The permanent home is the nidus from which sprung all the moral virtues. It is the basis of modern civilization and of our social form of government.

Primitive man undoubtedly contended with wild beasts and with his brutelike companions for food. He was swayed by selfish motives, and his life was narrow and full of hardships. But man had inherited the social instinct from his gregarious brute progenitors, and we soon find him joining himself to others and founding a clan or tribe for mutual protection and assistance. Such tribes were nomadic and wandered about in search of food. The balance of opinion inclines to the belief that these primitive tribal communities were founded upon a polygamous basis—that the women were held in common and the children supported by the community. The children took the name of the mother, as often the father was not certainly known. Parental love was at a low ebb and the children were left to take care of themselves as soon as they could walk. In spite of these facts, the association of a number of men for the general good must have banished to a certain extent the idea that the fullest life resulted when each man lived entirely for himself. For rude as was this form of government, each member of the tribe had certain duties which he owed to the other members of the tribe and other duties which he owed to the tribe as a whole. Egotism began to be replaced by a crude sort of altruism. When man had advanced to the stage in which he ceased to be a nomadic hunter and had developed into an agriculturist, he, from necessity, became monogamous and established himself in a fixed abode. The permanent home was established, and the time during which the children were under parental care was still further prolonged, because the children must now be so cared for and reared as to be fitted to engage in a higher calling—for agriculture is on a much higher ethical plane than hunting.

Professor John Fiske is entitled to the credit of clearly showing that the prolongation of the period of infancy lies at the foundation of the development of all the moral virtues. This is the germ from which sprung all our conceptions of altruism. The progeny of

the lower animals take care of themselves as soon as born. As we rise in the scale of evolution, the period of infancy is found to be progressively prolonged, until we come to modern civilized man, in whom it occupies nearly or quite a third of life. Children nowadays are under parental care and subject to home influences until they are twenty-five years old. When there is more than one child in the family, other children are growing up in the home at the time the first child is approaching the stage when he shall "finish his education" and take upon himself his life work. Thus the home influences become well nigh permanent. Parents and children gathered together in the home are subjected to the same influences. That which affects one, more or less affects all. Their joys and sorrows, their comforts and trials, their temptations and hardships are mutual. They cannot live a selfish life. All their interests are common interests. Sickness and sorrow develop patience, benevolence, kindness, charity and love. Not alone are these virtues manifested toward members of the home family, but soon they come to be extended toward the neighbors and their families. It seems to be well established that so soon as parental love and the period of infancy had been developed to such an extent that the establishment of the permanent home became necessary, then the evolution of mortality had well begun.—*Journal of Medicine and Science*, September, 1900.

PUBERAL HYGIENE IN RELATION TO PEDAGOGY AND SOCIOLOGY.

By Dr. Antonio Marro,
Director of Royal Asylum for the Insane, Linne, Italy.

From the "American Journal of Sociology," September, 1900.

From the beginning of puberty, which is marked by the rapid increasing of stature, the growth of genital organs, and the first appearance of sexual hair, to its full development in youth of both sexes, which is marked by the changes in voice, the growth of beard in man and the full development of the breast in the maid, and the other changes in physical condition and moral character, is a period of many years. It is not far from truth to affirm that in our climates we should estimate the duration of this period at from five to six years in the girl, and from eight to ten in the boy.

Now it is not indifferent to the welfare of individuals and of society to determine the manner in which during this whole period young people should conduct themselves in relation to the increasing activity of reproductive functions. Sexual impulses usually appear early in this period, and the healthier the conditions of youth, the earlier generally grows genital activity. But its free satisfaction, though grateful to the senses, is not equally useful to health and welfare. It is a general law that rules all the organic world that every progress in the development of a quality, of a function, or of an organ cannot take place without a regress, without inhibition in other properties, organs or functions. We can say that all organic life is founded upon this law. Even in moral life we remark the same thing. The first lesson that a boy receives at school, says Lander Brunton, is a lesson of inhibition; he is taught to sit silent and hold back the movements that exterior impressions, acting upon his excitable nervous system, urge him to make.

All education rests on this principle; the continuation and the amplification of this lesson ought to lead the boy to restrain his ardent desires, to subdue his temperament, to do his duty, however disagreeable it may be.

The inhibition of the cortical excito-motor centres, to whose hyper-activity is due the great restlessness of apes and idiots, goes to favor perceptive and ideative centres. Genius itself thrives, many times, only at the expense of health and bodily strength, and manhood reaches its height only by the sacrifice of the dearest joys of life.

In the case of Goethe the composition of each one of his great works was followed by an illness. Voltaire said that he never was glad but for a moment, and the ardent desire of perfection tormented him so that he exclaimed that he would die without having made a work according to his taste.

A law so general could not spare a function of such importance as the generative one. From sexual excesses, even in full virility, one notes, with the deterioration of character, the loss of manly virtues. Despotic governments find in this vice the best condition for their support. The Jesuits of the missions of Paraguay, in order to keep the Indians in servitude, had the bells rung at midnight to awake them from their sleep and invite them to propagation.*

When the body of the youth is still increasing, even the simple

* D'Azara, "Voyage à la Amérique méridionale," p. 9.

awakening to activity of such a function as the generative one, accompanied with so much loss of nervous force and noble materials, though so enticing to the unresisting youthful soul, must inevitably be hurtful to the complete development of the physical, as well as of the moral, organism.

Man satisfies sexual impulses in two ways, by self-abuse or by natural intercourse. Self-abuse is most common in early youth because of the greater ease of indulgence. It is true that the evils of onanism have been exaggerated. However, I cannot agree with Havelock Ellis when he makes Tissot, Voltaire, Lallemand and Bicher blameworthy for exaggerating the evil effects of vice, and for doing not a little damage by arousing excessive fears and groundless remorse in sensitive consciences.

It is chiefly by means of such books that the tradition of the evil of that vice has been developed, and has thus prevented so many evil consequences of an abuse which without them would have been far greater. The vice imposes itself, of course, with greater violence and more hurtful consequences on children already stained by degenerative vice, but it is also true that predisposition receives from this vice a strong impulse to enter into activity.

The alienist and neurologist is more than any one else in a situation to recognize and measure daily the immense sum of physical and moral misery which comes to youth from self-abuse. Apart from degradation of genital organs with spermatorrhea in the boy, leucorrhea in the girl, disposition to phthisic and to other illnesses which mostly arise from this vice, there is a sequel of moral and social inconveniences. It is a matter of fact that impairment of sexual organs brings with it a degrading influence upon the moral character. The boy becomes bashful, especially in presence of female individuals, loses frankness, cannot look in the eyes of other people, becomes timid, without courage and boldness. Inclination and skill for physical exercises, as well as study, vanish. Disposition to idleness and to strange fancies arises, and while an ill-founded self-esteem increases, the individual grows suspicious, unfriendly, and inclined to judge censoriously the demeanor of everybody toward himself.

Less dangerous for the physical welfare, if dangers of syphilitic or venereal infection are avoided, but not less noxious to individuals and to society, is the natural satisfaction of sexual impulses in early youth. The greater difficulty of indulging in it renders its abuse less easy, and its use has not such a deteriorating influence

upon the character as onanism, but other inconveniences arise. The first is, of course, the exposure to syphilitic or venereal infections in roving loves. It is a matter of fact that precocious nuptial sexual intercourse becomes noxious as well to individuals as to their descendants. We observe in mankind what happens among beasts. The sheep, observes Burdach, remains ordinarily sickly and slender when it is coupled before the third year, and the horses remain small and weak which are coupled at the age of three years. The same may be said of cows, goats, sows, etc. Physically imperfect are the animals born from such precocious unions. Courrasons reckons among the principal causes of the diminishing stature and general strength of modern Germans, in comparison with the old ones, the earlier sexual intercourse.

Too early indulgence in sexual pleasures has besides a deteriorating influence upon the moral character, which cannot enjoy its regular evolution.

At the first awakening of love in the boy, his sweetheart appears to him as a divine being fit to be adored, and for whom he fancies he could make every sacrifice, even that of his life; the least thought of possession would be driven from him as a profanation. It is only later that sexual desires make themselves known, and that the woman is wished as an object of amusement. It is from such elaboration of sentiment that social virtues draw their origin and that the character comes to perfection. If possession comes too early, without the preceding period of courting and unselfish love, the young man becomes a mere dissolute, cruel, and profligate being, who seeks nothing but luxury and gratifications. The excitations which affect the central nervous system from generative organs in activity of development, instead of being collected in tonic power to awaken and support the young man in the performance of his duties and the acquirement of the qualities which would make him agreeable to his beloved, come to arouse the atavistic dispositions to violence and fight, either in the struggles against rivals or in the purchase of means to ingratiate himself with the woman. Thence come the violent criminality from one side, and the crimes of theft and rapine from the other, when a suitable education in the first age could lead the young men to substitute for violence the methods of the civilized man, instead of cheating either parents or strangers.

It is therefore to be desired that young people grow without indulging in sexual pleasures till they have reached their full development in the physical as well as in the moral organism,

and one ought to employ all means suggested by a modernized hygiene, in order to hinder the too early awakening of sexual stimulus. The means recommended to attain such an aim are of different kinds, and one can say that sexual hygiene extends itself over the whole life of youth, to the food as well as clothes, to physical exercises as to mental application, rest, amusements, and society, besides the care that should be directly given to the organs of generation.

As to the food, it is necessary that it should provide for the necessities of the increasing body and for the consumption of hydrocarbonaceous substances which takes place in the youth. It must also richly provide salt for the skeleton, albumen for the muscles, and fat or hydrocarbonaceous substances for the consumption of respiration and muscular exercises. Bread, milk, and a moderate quantity of meat are wanted, and fruits for the sugar and salts that they hold and for the refreshment they give. One must, on the contrary, avoid too many eggs, and still more venison, aromas, truffles, drugs, and all other such alimentary substances, which have the tendency to excite the sexual organs. One must also avoid for young people coffee and alcoholic drinks, which have the bad effect of exaggerating the dispositions, already natural in such an age, to excitement of the nervous and circulatory systems. Clothes must not be too tight, so that the generative organs be not subject to friction during the movements of the body, nor so warm as to excite them. The bed itself ought not to be too soft and the bedclothes not too heavy.

Young people must, as a general rule, go early to bed and rise early. "Tous les masturbateurs se lèvent tard, et quand chez un adolescent sans aucune cause légitime on voit se développer une tendance à rester au lit jusqu' à une heure avancée, on a le droit de concevoir des soupcons," writes Ball;* and Payot replies: "Tout jeune homme qui demeure au lit une ou plusieurs heures après le réveil est fatalement vicieux."†

Work is against that, as well as against many other dangers, a great talisman. We must, however, always keep in mind the peculiar condition of youth, the reduced power of resistance caused by the rapid increase of stature and by the development of muscular masses and of the whole organism, so that either physical or mental effort can easily occasion fatigue and impair the health of youth.

* "Maladies mentales." † "L'éducation de la volonté."

We must, therefore, seek to arrange that the work of young people be done in conditions which avoid the pains of fatigue, and further the elimination of the waste which work creates in the tissues.

Every sthenic emotion seems to enjoy the immediate reward of such virtue: music, song, praise, emulation, self-love, sense of independence, and sexual emotion itself. The little song with which seamen accompany the weighing of the anchor helps to give their efforts simultaneity as well as intensity of action.

Alexander the Macedonian felt himself greatly excited with courage when Timotheus played the lute. I knew a lady who after a walk a few hours long was taken by a paraplegia which could be cured only after many months of care. Under a double emotion, the sexual and the musical, it happened that the same lady recovered; and we see young damsels and boys dancing during many nights without feeling any degree of fatigue. Lycurgus let the maids play before young men in order to stimulate them in their exercises. Jesuits in Paraguay let music accompany the Indians in their daily work in order to render it tolerable and agreeable (D'Azara). Emulation works so strongly upon young men that it is sometimes necessary to restrain them, rather than to push them to obey its impulsion. I have seen young men coming to insanity from the strain of mental work done in order to surpass their school-fellows.

Very strong in youth is the love of independence. Battell, who lived many years among the Giagas of Benguela, relates that they put a collar on the boys of twelve or thirteen years, as an emblem of servitude, which they must wear till they could show the head of an enemy killed by them. The young men defy every danger with the utmost courage in order to be delivered from such a mark and in order to receive the honor of being declared members of society.

An immediate reward is the best means of training children of irregular conduct in reformative houses to regular work. So we see in Italy Martini's and Garaventa's institutions.

The great attraction of games and sports issues from the immediate recompense that one expects from them. To these, as well as to every physical exercise, one must pay attention in youth. From our present point of view we should counsel avoiding among physical exercises those which bring with themselves a prolonged friction of generative organs, as climbing, descending along ropes, sliding with extended body upon the bars of the staircase.

In climbing trees it is useful to bring the most strain upon the soles of the feet set against the trunk of the tree, so that, the greatest pressure being in this direction, the danger is avoided of pressure against the thighs.

Swimming, on the contrary, is to be recommended for the refreshment that accompanies the exercise.

A still greater attention must be paid to mental occupation. Extremely delicate for the education of youth is the estimate of the notions that young people must have of sexual functions and the degree of attention they come to pay to them. Where thought runs, there innervation is awakened and the blood flows more fully. Such an excitement brought upon generative organs awakens them earlier to activity, and with greater frequency and impulsion than is useful for the physical and moral conservation of young people.

Among the Romans, in the presence of the young men who still wore the *toga praetexta*, it was forbidden to speak freely of things referring to the sexes. We know that the senator Manlius was condemned to death for having kissed his wife in presence of his daughter.

Licentious books, speeches and paintings must be banished from youth, and every unchaste spectacle, as so many springs of corruption; and we may give heed to Horace when he says:

> **Saepius irritant animos demissa per aures**
> **Quam quae sunt oculis subjecta fidelibus, et quae**
> **Ipse sibi tradet spectator.**

The counsel already given not to let young people stay late in bed in the morning finds its reason in this last condition.

On the other side, it must be acknowledged that the mystery with which sexual organs and functions are surrounded exercise upon the attention of youth not a small attraction. So great is the importance of sexual functions upon the future of youth of both sexes that it may not be convenient to leave them in ignorance of what concerns them. It is the duty of parents, and of those who take their place, to put them upon their guard against the perils that threaten them. Kaan* suggests with that purpose to begin with study of sexual organs and sexual functions in vegetables. The physiological notions acquired in that manner are of such a nature as to awaken the desire of learning, rather than that of curiosity.

In my opinion, hygienical thoughts ought to influence constant

* "Psycopathia sexualis."

ly the mind of youth in regard to everything which concerns sex, and form the daily habits of young men and women.

Young people should not be permitted to stay alone and give themselves over to building castles in the air. The first danger of such a habit lies in the improper formation of mental operations. Building castles in the air deteriorates itself the regular mental process of making associations. Ideas are not joined together by their real affinity, judgment does not come to rule them, and the determining power that brings action fails to be evoked to accomplish the mental process; or, if evoked, it acts in a perverse manner.

The next danger lies in the improper direction that mental operations take when not guided to a distinct aim. By fanciful connections between impressions and images, those which possess certain qualities impose themselves upon the others, and the mind runs easily to thoughts that find their origin in the unconscious excitement coming from sexual organs in their course of development and in their rising activity; and this is to be avoided for several reasons.

To these dangers we must join the unfavorable influence which solitude and taciturnity exert upon the character of youth. Solitude and taciturnity are, as a rule, noxious to youth, and they ought to inspire such an apprehension in those who superintend young people in relation to their moral welfare, as dislike of food or of movement inspire in regard to physical welfare.

All extravagances, all immoral and antisocial impulses, find a favorable soil; subjective life overbears the objective; the circuit of ideas becomes narrower, judgment is easily troubled, the development of affections is hindered, and their prolonged suppression provokes sudden and fearful explosions. Such conditions during youth are the most favorable for the rising of irregular characters, whence come the political madmen, as well as the religious ones, the lunatics of every kind, and dangerous criminals.

A little while ago I was called, within the very short time of eight days, to assist as an expert in two lawsuits over great blood-crimes perpetrated by two young men who were declared by all witnesses always to have been before the crime good, laborious, and mild characters, but taciturn and solitary. One of them slew a comrade with nineteen stabs with a knife. The other killed a maid of whom he had become enamored, and who had been refused to him by her parents. He laid wait for her, and fired at

her two gunshots, then inflicted on her sixteen wounds with a knife, of which nine were judged mortal.

All the modes of care just mentioned have their own value, and those who are charged with the education of youth must never forget to have recourse to them; yet it must be avowed that they are seldom sufficient to check genital impulsions, when awakened in an age in which the excitations are strongly felt and the power of ruling them is still but partially developed.

All moral counsels, warnings, threatenings, punishments, and appeals to the sentiment of personal dignity have little power against the temptation of the enticing sensations. Against the allurements of early roving loves Gowdin proposed as the best means the early betrothal of the young men, relying upon the affection that comes to unite the betrothed. But I believe that we cannot yield too much confidence in this as well as in all other moral means to hinder youth from indulging in sexual delights. Recourse to physiological means, that may rule the development of sexual impulses, is far more reliable. Most important among them is the action of temperature. There is a very strict relation between heat and sexual tendencies.

In hot climates puberty is precocious, and the rise of erotic impulse is early and strong. The menstruation of maids in Asia Minor, Arabia, Egypt and Abyssinia begins at eight or ten years, and so in India, where the religious laws allow the maids to marry at eight years of age. In South America Indian girls at eight or ten years are married (D'Azara). Artificial heat acts in the same manner as natural heat. In Russia, where the peasants sleep with their families near the stoves, exposed to very high temperatures, and where every one, from the sovereign to the humblest peasant, takes almost once or twice a week his hot steam bath, men and women are united in marriage at the same early age as those who are born under the sky of Hindoostan. The same happens with the Samoyedes, the Ostics, the Tacontas, the Kamtschadalese, and the Eskimos, who are even still more precocious. Even in individuals great sexual activity is generally accompanied with great internal heat. Among the most incorrigible masturbators that I had in the asylum, one could not support during the whole winter any woolen bedclothes, but only a thin cotton coverlet; the other passed quite bare-breasted through the winter without catching the least cold.

Another consequence of great heat is that the more precocious

is puberty, so the more precocious is exhaustion. Young oriental men who at the thirteenth year have sexual intercourse at the thirtieth are already worn out, and must have recourse to aphrodisiacal remedies in order to accomplish conjugal duties, while their wives cease at this epoch to menstruate and to bear children, and quite lose their beauty. Cold, on the contrary, is the great check and preserver of sexual activeness. In cold climates and upon the mountains puberty arrives very late, and the customs are generally more austere. The more the body is exposed to cold, the greater is the delay in the development of sexual tendencies. Among the ancient Germans, even at the time of the Romans, though clothes had been imported from the latter, the underaged boys were naked even in winter, while men wore the doublet and bedecked themselves with the second bark of the trees; and we know by the relations of Cæsar and of Tacitus that the venery of young men was late, so that it was ignominious to know the woman before the age of twenty years. Puberty, on the contrary, was long protracted. The German girls, whose nakedness scandalized the Romans, were not anxious to lose their virginal flower.

Extremely praised were the young men who kept their chastity till late, because they reached a higher stature and became stronger and more vigorous; and so strong limbed grew also the Hollanders, equally accustomed from boyhood to inclemency of weather and to go quite naked till puberty, even in the most rigid cold.

In Sparta, under the laws of Lycurgus, the girls, who could not marry till their body had reached its full development, wore only a short sleeveless tunic opened at the sides, that did not cover the knees. This roused the raillery of the Athenians. The boys at twelve years exchanged the *toga* for the short *pallium*, slept on straw or upon hay without coverlet, and when fifteen years old slept on reeds.

From these convincing facts we can infer the suitable means of delaying the puberal development in its sexual impulsive manifestations. The habits of our social life, the manner of clothing and of spending a great part of the daytime in close and warm surroundings in winter, conspire with many other causes to render puberty precocious. It is necessary to avoid such causes of disturbance. Gymnastics in the open air ought in youth to be invoked more than the thickness of clothes to keep the body warm. And with gymnastics should be employed the hardening of the body, such as one can obtain from daily cold hydrotherapeutic applica-

tions, either general or partial, to the genital parts and the neighboring region. I secured excellent success with cold hip-baths daily repeated in the cases of many incorrigible masturbators of our asylum, when all other means had proved unsuccessful. The hip-bath was repeated four times a day, and lasted from one to five minutes each time. In three cases the success was wonderful. After the first week, and in one instance after the third day, of hip-baths, the inspection of bed linen cloths showed that nightly masturbation had ceased, while the overseers informed me that during the daytime the sick young men forbore vicious practices. The first case was already incurable, and the second was a criminal insane person with whom the resistance of the vice was more tenacious and did not yield until after thirty-six days of hip-baths, which he took very willingly, though in the winter season, and he prolonged them beyond the fixed time.

By means of cold thus daily many times applied we can efficaciously check the precocious venereal impulses. Common hygiene recommends the washing of the genito-anal region on the ground of cleanliness. It is a counsel of sexual hygiene that the washings in the puberal age should be cold and daily repeated as many times as one obeys the natural wants.

From such a habit followed for many years by the women I found absolute immunity from leucorrhœa, and a virginity of the senses up to a very ripe youth.

The benefit of cool applications against sexual impulses was already known by the ancients. Galenus in his book *De sanitate tuenda* notes how a pedagogue of the athletes had applied to the loins of one of them lead plates "ut nocturnis veneris imaginibus careret," and adds that with the same remedy he had healed a man of the same trouble. Plinius, too, in his *Natural History* mentions such virtue of the lead plates, which so applied are capable "frigidiore natura impetus veneris inhibere."

It is therefore logical that the youths from such cold applications might succeed in securing the physical resistance and more suitable economical conditions to satisfy their reproductive instinct, with the advantage of a delayed but powerful and lasting virility. By this same means can the woman find a safeguard to keep untainted her modesty, even when the appetite of the sex is strongly felt.

When the impulses are more strong and unrestrained, as in individuals of vicious heredity, the cold hip-bath, sufficiently repeated, promises to check them better than all counsels or ex-

hortation and mechanical means employed to hinder them. This method of temporarily checking venereal impulses by means of cold is, in my opinion, of the utmost importance for the welfare of youth. Other applications of cold are not so powerful to the end, nor so harmless. In many seminaries and cloisters they seek to keep the surroundings cool, especially the dormitories, and provide light bed-cover so as to avoid arousing venereal impulses; but this method, while far less efficacious, is not without danger. Because the heating power and the strength of resistance that issue from an active life, such as was that of German and Spartan youth, always in movement and in continual gymnastics in the open air, are widely different from those developed in young men or women vowed to ecclesiastical or monastic life, in whom sedentary habits and asceticism tend to inhibit rather than to sustain the natural warmth; so that prolonged exposure to cold acts only to diminish living strength and joins a new depressing influence to the other conditions unfavorable to a vigorous life.

These inconveniences are not to be found in the local applications of cold by means of cold washings and cold immersions suitable to every social condition and both sexes.

The action is exerted upon a limited region of the body, upon the organs of which one wishes to restrain the functional activeness, without stopping their growth and the influence that their development exerts upon the whole organism. At least general health could not be impaired; on the contrary, the absence of immoderate excitations to the central nervous system from the genitals, as well as that of venereal satisfaction, ought certainly to exercise the most favorable influence upon the gradual and full development of physical as well as of moral strength.

It should therefore be, in my opinion, a first rule of hygiene to render so familiar the daily morning cool washing of the pelvis as that of the hands and of the face. Every boarding school or house for young people of either sex, with educational or other intent, ought to have water closets so disposed as to allow its inhabitants the opportunity of washing or bathing the parts in a current of cold water. The harmlessness of dressing one's self without wiping the wet parts is proved from Kneipp's hydrotherapeutic practices, as well as from my experiences on the insane subjected to cold hip-baths in winter, of whom none felt the least inconveniences in his general health. The employment of special linen being rendered useless, such applications become very much easier, and all danger of transmitting contagious diseases is avoided.

PHYSICAL CULTURE.*

By Mary L. H. Arnold-Snow, M.D.,
Late Clinical Assistant in Electro-Therapeutics in N. Y. Post-Graduate Medical School and Hospital.

Physical culture in its strictest sense means not the fad gymnastics of the day, not routine exercise for the multitude, but the care or education of man as a whole, the scientific evolution of the human system, its aim being to assist nature or art in relieving, curing, protecting against, or arresting deformity or disease—to develop the wonderful handiwork of God harmoniously.

Athletics have held a place of high recognition for centuries. Did not the ancient Greeks mark religion, victory and honor by periodical games, the Olympian, Delphian, Isthmian and Nemean? Their gymnasia fostered learning, cleanliness and vigor. Did not Galen say he was "the best physician who was the best teacher of gymnastics?" To Hendicus do we owe the first discovery of the relation between exercise and health, and to Socrates and Hippocrates are we indebted for the early systematizing of medical gymnastics. Later the Romans introduced physical education. Following history, we see the trend of exercise in the thrilling stories relative to the crusades, feudal system and chivalry. As advocates of exercise, we note Luther, Melancthon, Elyot, Dr. Mercurialis, Milton, Montaigne, and in 1893 Locke, who championed medical gymnastics. Pestalozzi directed movements to the joints. Early in German history were education and gymnastics connected, but later the connection was severely strained, one might say, almost severed. At the present time they are more closely united than ever before.

During the last fifty years the science has gone through an era of scintillation. This has been due to various causes. Of what value is it? Is it a pastime, or is it to influence the life of the individual—to appeal to his social nature—and to foster civilization? Wheresoever it be introduced, not until it demonstrates itself of practical importance to man's well-being will it gain a living status in the educational world. View the grand results obtained at Harvard, Yale, Wellesley, etc., where the work has been fully systematized and grounded on a firm medical basis. But such results should not be left to but a few of the leading

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colleges or gymnasia of our country; they should be of greater scope.

Physical culture is a restorative spoke in the great, nicely balanced wheel of nature. Not until its place is clearly defined will its importance be recognized by the world, and that status will ultimately depend upon the enlightened medical practitioner.

The German, the Swedish, the Delsarte and many other systems have their advocates. Probably the greatest rivalry is between the German and the Swedish systems. The German system has a psycho-physiological base, and aims at general physical culture. It stands for exercise as a whole against sets of muscles. It favors apparatus in its work.

Ling, the founder of the Swedish system, considered a physiological basis necessary, every movement demonstrating its physiological effects. The German system claims to have paid more attention to the nervous system. It "moves with general pedagogy." The Swedish system has "methods and ways of procedure. It begins at definite points and proceeds with order and regularity." The Delsarte is really not a system, but a part of a system, its underlying principles being "relaxation, energizing and deep breathing." Each has its merits, but as a cosmopolitan people, eventually we shall have a truly American system evolved from the best of all.

Rational physical culture should have anthropometry as a base. A complete history should be taken of each case, name, date, age, occupation, weight, family history, previous diseases or accidents, general symptoms, condition of respiratory, circulatory, digestive, genito-urinary and nervous systems, examination of special senses, heights, girths, breadths, lengths, depths, strengths and deformities. Inspection, palpitation, auscultation and percussion are called upon. Great is the importance of a correct diagnosis. Examination of the respiratory system includes many parts. The nose or throat may show the presence of catarrh, the cause of asthma, or asthma, or even the trace of syphilis. The presence or non-presence of disease should have a direct bearing upon the breathing exercises. Asthma calls for shoulder raising and lowering arm work, having a tendency to elevate the chest. The larynx shows tuberculosis, syphilis, exudations, tumors, stenosis, etc.

Chest examination adds to anthropometrical data. Inspection shows form of thorax, thereby revealing certain causes to the skilled physician. The form of the chest shows the place of need for increased development, but the cause demonstrated by that

form shows that the active exercise of certain muscles should be wholly prohibited, while that of others should be mild and under certain regulations. Inspection reveals spinal curvature and bent carriage, for the cure of which suitable exercise should be prescribed. The degree of curvature shows whether the case is suitable for rational gymnastics or the surgeon's art. A thorough examination in respect to palpitation shows pain, thoracic movements, fremitus and fluctuation. Pain, bronchial fremitus, or friction fremitus indicates the presence or former presence of inflammatory disease, where rest of the part is essential, and work of its opposite may be necessary. Symmetrical exercise should then be avoided. Although working favorably in health, for a weak chest, head and trunk bending, arm stretching and wand exercise might mean life-long injury to a sufferer. Mensuration, stethometry, pneumatometry and spirometry are essential to assist in demonstrating the present condition of the patient, and later condition after a systematic course of exercise. Percussion may outline viscera, or demonstrates dullness over the lungs, which may mean airless tissue, or exudations, infiltrations, relaxation of lung tissue, etc., which modifies exercise. Auscultation relating to changes in vesicular murmur, râles, etc., demonstrates the prohibition of certain movements. Microscopical examinations and urinary analysis assist in outlining the work of the gymnast. Examination of the heart reveals dislocation, change in size, insufficiency, stenosis, etc., in which cases violent exercise or slight overwork may mean death.

Certain stomach troubles necessitate trunk bending, arm swinging or trunk rotation, although other existing conditions might prohibit or modify this prescription. Anemia would be an indication for head and trunk bending, arm raising, etc., whereas wand exercise would be barred as being too violent and liable to be followed by consequences of overwork. The more accurate the diagnosis, the better the exercises can be regulated to existing needs, and hence the greater the improvement of the patient. We recognize that some colleges require anatomical dissections, etc., in their physical culture course, yet as representatives of Æsculapius we know that such work does not represent a technical medical course. Such work should be referred by the advocate of physical culture to a physician. After the report of the case the physical culture teacher should outline his work. The physician bears the same relation to the physical culture instructor that he does to the pharmacist, or that the oculist does to the optician.

When such is recognized will physical education take a step forward.

Some cases are better adapted to exercise than to drug treatment. Other cases of the same name, but of different degree, belong to the physician wholly, while others will eventually yield but to the surgeon. So a technical degree of nicety of discernment must be impartially recognized by the physician making the diagnosis after consultation with the instructor of physical culture, and the case should be relegated to the proper person, be he physician, surgeon or physical culture instructor. Physicians have their domain, the physical culture operators theirs, yet should they be united by "the deepest compassion for human ills, the broadest generosity to human needs, the highest respect for all that is strong and pure and holy in human lives."

Exercise is work done with a physical object, either strength, power or health, and has as a base muscular contraction, which is subordinate to the will. Co-ordination is essential, and dynamic contractions must be carefully studied with regard to their adaptability. We must ward off objective fatigue due to altered chemical composition—subjective fatigue should be a modifying guide. Exercise causes effort, which has aptly been said to be "a physiological action which consists in the association of a great number of muscles and bones, that they may assist in the same movement, and which, moreover, brings into active association with the muscular work two great functions of the economy: respiration and circulation, a phenomenon associating the great organic functions with the localized muscular action." More air is taken into the system, making possible greater oxidation with its attendant warmth or glow. Elimination is increased, and dissimilation is accelerated. Cellular activity is increased. Exercise "increases the gains, also the losses of the system, but tends to a more perfect equilibrium of the system in general." It increases the size of the chest, strengthens the muscles, increases the capacity of the lungs. It flushes out the great channels of the body. Surplus fat serves as fuel, the muscle tissue, receiving increased nutrition, changes in size and shape. It becomes firm and reveals its curves or beauty. But if overworked a diminution in size occurs, or even rupture.

It has been ably demonstrated by Bernard Roth, F.R.C.S., that exercise has a marked effect on certain spinal curvatures. It lifts the drooping shoulders of the child, it trains the wayward and awkward carriage of the body, so often later calling for surgical measures. Passive, resistive or active flexion, extension, prona-

tion, supination, abduction, adduction and circumduction have well defined fields that yield marked results under the guidance of a skilled physical culture operator, that naturally aids the surgeon or physician in the treatment following fractures, for weak muscles, occupation neuroses, paralysis, lack of development, nutritive disorders, anemia, general debility, inactivity of organs, plethora, asthma, constipation, etc. In some cases it is able to work alone, in others it simply assists. This is where discrimination must be made, and neither the physical culture teacher nor the physician or surgeon should hesitate to honestly acknowledge when a case is beyond his specialty.

Another side to be considered by the physician is that of mental fatigue. In this age of civilization, when "cram" is the watchword, many are the children who suffer, often silently, from overwork. In such cases tonics, fresh air and special drug treatment have a place, but properly adjusted exercise helps to establish a body equilibrium. The child may take exercise at school; but, pray, do not blame the overworked and usually underpaid teacher, for he does the best he can under existing circumstances. In classes of thirty or even fifty can individual attention be given? The exercises must be class work, and they must call forth the energies of the mind, the pupil's close and fixed attention, judgment and comparison, in order that any work may be done, yet at the same time additional work is being put upon the brain. Economy of mental energy must be recognized by not only the physician and instructor of physical culture, but by the masses.

Properly applied gymnastics also act as a preventive of certain bodily tendencies, and are advisable for healthy individuals. But we shall make no further note of this side of the question.

Physicians, men of broad culture, men of highest intellectuality, those who "come closest to the mystery of life and the mystery of death, who read the naked heart when it is too weak or too sorrowful to hide its nakedness," add one more panacea to human ills. Consider the subject of physical culture, analyze its merits and demerits; give it an impartial trial in connection with medical, surgical, hot air or electrical treatment. You are progressive, thoughtful, keen, and recognizing the importance of a healthy mind, and knowing that "mens sana in corpore sano," broaden your field and power to give such, and ascend one more round in the ladder of medical advancement for the benefit of that countless multitude of humanity who honor and despect, yea, almost worship, "Our Doctor," who brings sunshine, health and consequent happiness to serve in life's battle.

ARTIFICIAL AIR.

DIVER STAYS UNDER WATER BREATHING CHEMICAL OXYGEN.

"I could stay down all day without the use of the air pump, so long as I had that stuff in the helmet!"

Emanuel Johnson said this. Mr. Johnson is a diver (Boston "Advertiser," Sept. 3).

A test of scientific importance was being made. In the diver's helmet had been placed a powerful chemical, of which oxygen formed a large part. When the diver was beneath the surface the air pump was stopped, the diver depending instead for sustenance on the oxygen liberated from the chemical. The idea was to see how long he could live beneath the waves without the good offices of the air pump.

Desgrez and Balthazard, who found that by means of binoxide of sodium they could under certain conditions "renew" air indefinitely, lined a diver's helmet with the material, which generated enough oxygen to keep its wearer alive under even the most adverse conditions. This important fact was cabled to New York, and Dr. E. E. Smith, a well known chemist, was asked to test the efficacy of the chemical on some guinea pigs.

Dr. Smith's experiment was so successful that it was determined to carry the idea further and actually have a diver go under water in a specially prepared helmet in which he would get no other supply of life-giving oxygen than that furnished by binoxide of sodium.

Such a test would have a vastly greater significance than the test with the animals, because however much could be learned from the symptoms displayed by the latter, in the human test there would be the additional advantage of obtaining from the diver's own lips his actual feelings when under the influence of the chemical.

He would be able to relate just how it felt to breathe artificial air, whereas the guinea pig could only sit and gaze appealingly through the walls of its glass prison at the experimenters, who, while the test was going on at least, could only tell by the motion of the animal's pulsing sides whether or not it was ill or well. As for the chemical, Dr. Smith had already calculated a certain factor of safety in dealing with the stuff. He had said:

"There is approximately one pound of oxygen in 50 cubic feet of air. A human being uses about 31 grammes of oxygen in an hour. Twenty-three and one-third parts by weight of binoxide of

sodium are oxygen. Therefore on this basis I should say that theoretically 5 pounds of binoxide of sodium would yield enough oxygen to sustain a person twenty-four hours."

So the idea was communicated to Emanuel Johnson, a diver, who has spent many of the best years of his life walking on the sea and river bottom around New York. He knows the hills and dales, and the shallows and the crossways under the harbor as well as the district messenger knows Wall street and its contiguous alleyways. And he was asked to pick out a spot somewhere this side of the Narrows where the conditions would be typical and the test fair.

"We'll try it off the bulkhead that juts out from Thirty-ninth street, Brooklyn," he said.

Binoxide of sodium is a highly active material. It is made by heating sodium in oxygen until the sodium ceases to gain in weight. In order to extract the oxygen it is necessary to decompose the binoxide, and this is accomplished merely by subjecting it to moisture. Water dripping on the chemical will set free the oxygen.

But the process is quite dangerous. The binoxide must not be allowed to come in contact with the organic material or combustion will take place. For instance, one of the men present poured a little of the powder on his dampened handkerchief. The handkerchief immediately burst into flame.

Hence it will be seen how highly important it was to confine the chemical in the helmet so that the oxygen would be set free and yet none of the powder come in contact with the diver's skin or clothes.

Into each side "eye," was fitted a little tin box to hold the powder, and in front of each box was placed a little brass screen of very fine mesh. The powder could not get out of the boxes and through the screens. On the other hand, the natural moisture of the man's head and body, which was to be depended upon to set free the oxygen, could permeate the screens, and do its work very neatly.

By the time the tin boxes had been charged with the sodium and inserted in the helmet Johnson was ready for the first test. One man took his watch in one hand, and the diver's wrist in the other and began to count the pulse beats.

Another sat at the opposite side of Johnson and looked in through the side window of the helmet at the chemical. Johnson had doused his head in water and already this moisture was beginning to act on the sodium. Little silvery bubbles of oxygen

were clinging to the wire screen, where some powder had been spilled in charging the cups, and deep in the tin box the snowy whiteness of the chemical was turning to yellow as the oxygen left it and the carbonic acid gas from Johnson's breath was absorbed.

Through the front window of the helmet the man's face, seeming strange in such an enclosure, peered forth to where the assistant at the pump, idle now, stood with folded arms. So strange, indeed, did Johnson look that some one put his mouth close to the window and called apprehensively in a loud voice: "Are you all right?"

And from within, yet seeming a great distance away, came the reply, soft as an echo, "Aye! Aye! Sure. I'm all right."

"He seems all right, at any rate," said the man with the watch. "His pulse is ninety-two, his respiration forty-two." But later, when Johnson made a motion toward his helmet, his "tender" rushed to get it off. The man at the pump, too, rose up with a jerk and began grinding away like mad. His chief should have air at any rate. The helmet came off with a clank and Johnson sat dishevelled, his head rising from the brass collar of the suit like an immense mushroom from a flower pot.

"Were you overcome?" cried several.

"Not a bit of it," he replied. "But what's the use of wasting time on the pier? That stuff's all right. I'm going under water. How long was I in here?"

"Seven and a half minutes," replied the timekeeper.

"Very well, then, be ready with that pump, for I'll need air until I get to the bottom to keep off the pressure. After the suit is once filled with air you can stop the pump, and then the chemical will give me all I want."

It should be said that air is kept flowing into a diver's suit as much to keep off the pressure of the water from without as it is to give him breathing material. From this standpoint it might seem that binoxide of sodium would have no practical utility in sub-marine work.

But Johnson had a notion that if enough air was first pumped into the suit to equalize the pressure the pump could then be stopped and he could depend on the chemical as far as his lungs were concerned. So it proved.

Johnson signalled to be raised at the end of the fifth minute, and when he reached the surface he explained that he was forced to come up because water was leaking into his suit.

He said there was a small break in the collar of the dress, which

ordinarily attracted no attention because the strong rush of air from the pump pushing outward on the suit in all directions prevented any leak.

But now with the help of the pump the dress was not proof against the inward pressure of the waves.

The suit had filled gradually from the feet up, and of course would have drowned the diver had he stayed down. In proof of his assertion Johnson stood on the stringpiece and leaned over from his waist. Immediately a stream of water ran out of his suit at the neck, just as though he were a human pail emptying himself in the bay.

But the danger of the rising water within the suit did not discourage the diver, who went three or four times again to the bottom of the bay and stayed as long as his leaking suit would let him. In no case was he incommoded for lack of air. He breathed naturally, he said, and with no effort. The limited air of the helmet seemed to him when he was coming up as when he was going down. Yet this was in spite of the fact that the arrangements for supplying him the binoxide of sodium were almost rudimentary.

MISTAKEN THIS TIME.—Col. Moore, a veteran politician of the Old Dominion, was a most pleasant and affable gentleman, and a great lisper withal. He was known by a great many, but he pretended to know many more. A story is told of him in which he failed to convince the stranger of their previous acquaintance, and finally had to confess himself outwitted. All things to all men, as was his custom, he met a countryman one morning, and in his usual hearty manner stopped and shook hands with him, saying:

"Why, how *do* you do, thir? Am very glad to thee you; a fine day, thir; I thee you thill ride the old gray, thir."

"No, sir, this horse is one I borrowed this morning."

"Oh! ah! Well, thir, how are the old gentleman and lady?"

"My parents have been dead about three years, sir."

"But how ith your wife, thir, and the children?"

"I am an unmarried man, sir."

"Thure enough. Do you thill live on the old farm?"

"No, sir; I've just arrived from Ohio, where I was born."

"Well, thir, I gueth I don't know you after all. Good morning, thir."

PUBLIC WATER SUPPLIES AND THEIR LIABILITY TO INCIDENTAL POLLUTION.

Abstract of Paper Read by T. H. McKenzie, C. E., of Connecticut State Board of Health, at Meeting of the New Haven County Health Officers, Woodmont, Sept. 6, 1900.

During the last forty years the close relation between the quality of water used for public water supplies and the death rate from zymotic diseases, notably typhoid and diarrhoeal, has received increasing attention in both Europe and America.

Water consumers are beginning to demand pure water, although it may be a costly luxury, and of late years much progress has been made in the line of preventing the pollution of water supplies, as well as the knowledge of water purification by filtration.

Several of the larger cities are setting up a high standard by policing their watersheds and stopping all preventable pollution, and although none of the public water supplies of Connecticut are seriously polluted by sewage, several of them are so extensively polluted with vegetable matter as to be offensive on account of the odor and color.

An engineer in designing any new water supply to meet the demands of to-day could consider only three kinds of water: First, spring or ground water, not subject to pollution and stored in covered reservoirs; second, water from very sparsely settled mountain watersheds and stored in large reservoirs; third, filtered water.

Probably none of us would refuse the spring or mountain waters, but many are not aware of the results of filtration, as the art of properly filtering a polluted water is of recent origin, particularly in this country. The conditions under which water frees itself, not only of turbidity, but of microscopic bacteria suspended therein, are fairly well known, and are in fact an imitation of nature's process of converting surface water into spring water.

The results at Lawrence, Mass., and at the recently constructed works at Albany, N Y., have demonstrated the fact that a highly polluted water can be freed from dangerous and poisonous organisms and the death rate from typhoid and diarrhoeal diseases greatly reduced.

The cost of filtration, however, is considerable, amounting to from five to seven dollars a million gallons filtered, or about fifteen hundred to two thousand dollars per year for a town of five thousand population, so that filtration is seldom resorted to where spring and mountain water can be secured and the purity of the supply maintained.

It is my intention to speak more particularly of the many ways in which the public water supply can be contaminated and rendered unhealthful, and of the ways in which a public health officer may be useful to the citizens under his care by aiding the water works authorities in discovering and stopping all preventable pollution.

In the case of some of our New England towns, the watersheds furnishing the supply are settled and in a few cases villages are located on the streams. In such instances an effort should be made to have the sewage from the villages properly filtered before entering a stream furnishing the water supply. In the State of Massachusetts much has been accomplished in this line, and in Connecticut the trend of the court decision is strongly in the line of enforcing purification.

Aside from the grosser and well-known sources of pollution, there are other sources of danger due to temporary residents, such as camps of lumbermen, and laborers' camps, fishermen and pleasure parties, and a frequent patrol of the water sheds is necessary to discover the sources of danger. Since the days of the modern steam saw mill, a loggers' camp is often located and built up in a single night, and usually very close to the bank of the stream, so that the water can be easily secured for steam and other purposes. I have recently had a case on the water sheds of the work under my care, where a camp of sixteen men and six horses was located and settled in one day on the stream emptying into our distributing reservoir, and within eight hundred feet of the head of the reservoir. I chanced to discover them within twenty-four hours after their location, and immediately sent men to dig pits for privies and to keep a watch over the men to see that the pits were used.

I am not sure that there is any law which would prohibit people from dropping their faeces promiscuously in the woods and on the border of the streams if on their own land, and I concluded that the labor for caring for the necessary sanitary arrangements would be cheaper than the lawyers and courts.

With the exception of pollution of a temporary nature and by transient residents, there are within the water sheds of two and

one-half square miles tributary to our Southington reservoir, but two houses which drain into our water supply. These are distant about eight hundred feet from the brooks feeding into the reservoirs. At both of these houses we dig pits and bury the contents of the privies twice a year.

We are doubtless all familiar with the history of the typhoid fever epidemic at Plymouth, Pa., which was easily traced to one case of typhoid on the shed of the water supply for the town, where, in a town of eight thousand people, there occurred twelve hundred cases of typhoid traceable to this single case.

The outbreaks of typhoid fever at Windsor, Vt., about 1894, also at Providence, R. I., in 1888, and at Caterham, England, in 1879, were traced to single cases of fever contaminating an entire water supply.

There are but very few water supplies in this State which gather the water from sheds which are unpolluted, or in which there are no houses or camps, so that every supply needs to be looked after, and every health officer should be at once informed of any cases of typhoid, not only in his own town, but in the adjoining towns, if within the drainage area of his water supply, and in the event of a general outbreak or of a single case of fever, he should visit the place and ascertain what disposition is made of the dejections of the patients. The safest way is to either burn them or bury them deep in the earth.

One of the greatest dangers to a water supply is the repairing or adding to an existing supply by the building of new reservoirs and dams, particularly if the new dam is above the old one on the same stream. It often happens that the force employed to construct a new reservoir equals the population of a small town, and they are planted suddenly by a contractor on the water shed with no sanitary conveniences and no provisions in the contract for protecting the water sheds from pollution. In such cases the health officer cannot be too early on the ground.

In my judgment it is not safe to allow the use of grounds surrounding any public water supply for fishing, boating or any other purposes of entertainment, and every possible source of contamination should be excluded; as to the exclusion of cows, horses and sheep from pasturage on water sheds tributary to public water supplies, I do not know that it has ever been shown that their droppings will cause any particular disease; their presence, however, is offensive to the senses, and tends to create a prejudice

in the minds of the consumers against the water, and it is safer to exclude cattle from pasturage in close proximity to reservoirs, and for the same reason fertilizer should not be used.

Water sheds and reservoirs should be inspected personally, not only by the superintendent of a water works, but also by the town and city health officers of the towns and cities where the waters are used. Even if the laws are not such as to enable the health officer to prohibit and stop pollution, the fact that they have knowledge of any nuisance existing in the water shed will have a good influence on both officers in charge of the work and the parties maintaining the nuisance, as there are but few people who will maintain a nuisance when it is properly brought to their attention by a health officer, and, if they so persist, the county health officer should no doubt find laws which would fit their cases and ways of enforcing the law.

I presume some health officers do not consider it their duty to look for trouble or attend to any matters, except such as are brought to their attention by complaint from other people, but my idea of the duty of a town health officer is that he should be ever on the alert to discover any cause of disease and that he should take the initiatory in removing the cause.

THE BENEFIT OF ALUM IN WATER FILTRATION.

THE EAST PROVIDENCE FILTER, R. I.

BY CHARLES V. CHAPIN, M. D.,

Superintendent of Health.

The question of water pollution and purification has for nearly twenty years been prominently before the people of this city and particularly the medical profession, and it is doubtless for this reason that the writer has been asked to contribute a short article on mechanical filtration. It is of course unnecessary to present arguments to show the advisability of improving the public water supply of Providence. It is self evident that a river flowing for miles through what is almost a city is liable to be dangerously polluted, even if it had not been proved by several unfortunate

outbreaks of enteric fever. For ten years the purification of the Pawtuxet water has been discussed, and it has been feared by many that some of the plans proposed would be far from satisfactory. The "mechanical filter," so-called, using alum is mistrusted by many. This mistrust was shared by the writer when he began to investigate the subject, and was only dissipated after a long series of trials and observations. Perhaps the most impressive argument is a concrete fact coming within one's present knowledge, and for this reason the writer will briefly relate what the neighboring town of East Providence has actually done to purify its water, while we in the capital city of the state have done nothing but talk.

The East Providence Water Company takes its supply from the Ten Mile River, which has its source in Massachusetts and flows through the village of Attleboro. The sewer from that village empties into it, and also the privies of several mills and shops. The water has quite a color, and contains at times considerable sediment and is very unsatisfactory for a public supply both from a sanitary and an aesthetic standpoint. As the East Providence Water Company is a private corporation and run on business principles, the management not only decided to improve the water but promptly carried out its decision. The State Board of Health was consulted, and on the advice of Dr. Swarts, its Secretary, a mechanical filter of the Morrison Jewel type was installed early in 1899 and has been in successful operation ever since. This filter was designed by Mr. E. B. Weston, of this city, and the tests of its operation have been made by Dr. G. T. Swarts and Prof. J. H. Appleton. The conclusions of men so well known in this community should have especial interest, particularly as it is well known to the writer they are the results of patient investigation and not in any way influenced by preconceived bias. The East Providence filter is situated at Hunt's Mills, a picturesque spot, for many years the site of a grist mill. It can readily be reached by the Rumford electrics and will well repay a visit. The filter consists of a single tank which is designed to furnish 500,000 gallons of filtered water every twenty-four hours, but at present scarcely half that amount is required. Though the plant is a small one everything can be learned from it that could be from one of a hundred times its capacity. A large plant would consist of a great number of tanks exactly like this one, each operated in exactly the same manner. It is therefore just as easy and simple to con-

struct a filter for Providence or for Philadelphia as it is for East Providence. The tank is about fifteen feet in diameter and contains a bed of crushed quartz about three feet deep. The water flows upon it by gravity from the river above the dam. Sand of itself will not remove bacteria from water. In both the natural and mechanical filters the sand is merely a support for the essential part of the filter. A slimy gelatinous layer must be provided on the surface to catch the organisms and other suspended matters in the water. In the so-called natural filter, this layer is obtained by allowing the slimy organic matter naturally found in the water to collect on the surface of the sand. In the East Providence filter the real filtering material is hydrate of alumina, which is precipitated on the sand after the addition of sulphate of alumina to the water. This is one of the distinctive features in the operation of this style of filter. The sulphate of alumina is dissolved in large wooden vats and is injected into the water as it flows towards the filter by a very ingenious but very simple device. A slowly revolving wheel dips up the alumina solution and adds it to the water. This wheel is operated directly by the current of water flowing on to the filter, so that the amount must necessarily be directly proportional to the amount of water. If the device fails to work no alumina is added. An over supply of alumina is practically impossible.

In common with all filters, clogging of the surface of the filter gradually takes place, and an increased head of water is required to send the necessary amount of water through the filter. In all filters, mechanical and otherwise, automatic devices are necessary to regulate the amount of water passing through, and such a regulator, designed by Mr. Weston, is found at East Providence. Mechanical filters, like sand filters, in time become so clogged that it is necessary to clean them, and for this purpose the current of water is reversed and forced up through the sand, which is agitated by mechanical means; hence the term "mechanical" filter. This is another distinctive feature of this type of filter.

The object of filtering public water supplies is: First, to remove bacteria, because some among them may be pathogenic. Second, to remove other suspended matter or "dirt" in the water. So far as our New England waters are concerned whatever will remove bacteria will remove the rest of the dirt. Third, to remove the coloring matter. Of course to secure a water free from disease germs is the most important thing, but it is also important to

secure a clear and colorless water which shall be attractive to consumers.

The action of the East Providence filter has been carefully tested on all these points.

Bacteriological tests were made by Dr. Swarts daily for a period of nearly five months and the filter was found to remove 99.2 per cent. of the organisms, which is a very high degree of efficiency, and is rarely attained by natural filters. That the other suspended matters are removed can be readily demonstrated by a glance into the clear water well of the East Providence Water Company. That the coloring matter is removed is also vividly shown in the same way, as well as by the laboratory tests conducted by Dr. Swarts. Daily color tests showed that eighty-three per cent. of the color was removed, rendering the water in small volumes practically as colorless as distilled water. As to the efficiency of this filter there can be no question.

Very decided objection has been made, particularly by physicians, to this type of filter because alum, or more properly sulphate of alumina, is added to the water. But the sulphate of alumina is decomposed by the carbonate of lime in the water, and insoluble hydrate of alumina formed, which is precipitated on the sand and retained there. Numerous tests of the East Providence filter, as of many other mechanical filters, including one operated for many months with Pawtuxet water, showed that absolutely no alum or hydrate of alumina could be found in the effluent water. Indeed Prof. Appleton's tests showed that there was less alumina in the filtered water than in the Ten Mile River, doubtless because of the removal of silt containing alumina. This certainly does away with the objection that our New England waters do not contain enough carbonate of lime to decompose the sulphate of alumina. To those who think that such reasoning is too theoretical, it may be said that for ten years the practical experiment has been tried of furnishing several hundred thousand people in various cities of the United States with alum treated water, and no bad results have followed. To come nearer home, the people of East Providence for months, and the people of Newport for years, have drunk such water, but nobody has been the worse for it. It is rather surprising that no trouble has arisen from the use of alumina, as many of the water companies in the West and South, as is apt to be the way with private companies, are very careless both as to the construction and care of their filters. It simply shows that the "margin of carelessness" in this process is a broad one.

Objection is also made that alum in the water will injure boilers, but if there is no alum in the filtered water, as there is not, certainly the boilers cannot be injured. The Providence Dyeing, Bleaching and Calendering Company have for years used alum treated waters in their boilers and find it better even than Pawtuxet. There is no complaint from East Providence on this score. It is true, indeed, that the hardness of water is somewhat increased, as showed by chemical tests, but this has not been shown by experience to be enough to affect the operations of the laundry. The hardness of the water is also increased by passage through the new natural filter at Albany.

There is no question that according to theory and experiment the East Providence type of filter should furnish a water free from germs, colorless, and without a trace of alum. Very properly the most of us prefer the evidence of accomplished facts to theoretical deductions. For this reason the writer advises that all who are interested in pure water, and each one of us should be, should visit the water works at Hunt's Mills. Let the visitor examine the river water and look into the clear water well and see the beautiful clear water, let him taste it for alum and let him search, as he will, in vain, in East Providence for an eroded stomach, or a corroded boiler, and he will be convinced thereby that mechanical filters are simple, safe and sure.—*The Providence Medical Journal*, October, 1900.

THE RELATION OF AGRICULTURE TO THE PUBLIC HEALTH.

Good Counsel for Farmers.

The monthly bulletins of the Massachusetts State Board of Agriculture are intended for the reading of the farmers, and in the September issue good judgment has been shown in the insertion of a paper by Dr. Abbott, secretary of the State Board of Health, on "The Relation of Agriculture to the Public Health," and primarily to its effect upon the health of the farmer himself. Starting with a table of the comparative mortality of men in different occupations in England, which can probably be applied without much change in this country, the clerical profession is

taken as the basis of mortality computation, as the lowest, and from this standard of 100 per cent. the ratio climbs up through various callings until it culminates in 397 per cent. in the hotel service. But after the clergyman, the farmer is statistically the most exempt from fatal physical ills, as the mortality in that class is only fourteen per cent. greater.

Thus, with one exception, the farmer is the longest lived man, and no one is surprised by the fact. The "inherent character of his occupation makes it a promoter of health and lengevity. . . . Were it not for certain circumstances he would lead the list." It is important that he should know the nature of these circumstances, even if they reflect upon his judgment, his tradition and his inherited notions. He enjoys the benefit of fresh outdoor air more than men of most occupations, but he frequently forgets that fresh indoor air is quite as important to him and his family. Too often the sleeping rooms are too small and lacking in proper means of ventilation. It is quite common for prejudice to be entertained against the admission of out-door air, especially night air, into the sleeping and living rooms.

A little incident illustrative of the doctor's contention may be mentioned here. Near the western part of the State a few years ago lived a farmer and his family whose custom it was in cold weather to keep the doors tightly closed and the windows well battened. The head of the house was a carpenter as well as a farmer, and one season undertook the repair of his house personally. The task was not completed when winter set in, and the family, much to their horror, had to endure an amount of cold air that was an entirely new experience. His wife, speaking of it afterwards said she didn't know how they could have endured it had they not fortunately been in better health than usual. Even then she did not connect cause and effect, but considered their exceptional robustness as a direct intervention of Providence.

Care in the water supply is another thing regarded as essential, and food is equally an important condition. The board of health a few years ago made an investigation of the food of farmers in this State and found good bread scarce, and too often made with an unwholesome substitute for yeast. There was too little variety; meat was too often fried; there was an over-indulgence in pastry and cakes, and too little time was given to meals. Another source of harm exists in the excessive use of patent medicines. Spring medicine as a blood purifier is a tradition almost religiously ad-

hered to, and "pounds of iodide of potash are taken under the false name of sarsaparilla, of saltpetre under the name of kidney cures," and various highly alcoholized compounds for the supposed tranquilizing of the nerves and for other remedial purposes.

Then comes the question of sane recreation, a matter which the farmer is too prone to neglect altogether. That is something to be regulated by need, but it is always safe to recommend good reading, especially for the long winter evenings. With this in view the doctor thus closes his paper: "Let me not close without commending to every farmer as an addition to his library the biography of such a man as Pasteur, together with the works of Thoreau, or John Burroughs, of Bolles and Bradford Torrey, and of good old Gilbert White of Selborne. It is from the study of the writings of such men that our eyes are opened to see the life that surrounds us in the woods, the fields, the ponds and the streams, and to learn from every living thing some new and useful lesson." If the farmer can catch, even partially, the spirit of such interpreters of nature as these, his occupation will be a perpetual delight and his farm a paradise.

MEAGRE FOOD AND HEALTH.

Ex-Judge William Cole Talcot, of Valparaiso, Ind. ("Medical News"), has lived for several years with his wife at a total expense for food of not more than $1 a week, or $52 for the year. Both are in the best of health. They declare that they never felt better nor could work better in their lives, and believe that they have solved the problem of happiness and health in resorting to the plainest of plain living. Their meals consist chiefly of cereal products, with milk and sugar. They eat generally for breakfast oatmeal mush, with milk and sugar. For dinner they have bread and milk and sugar, and for supper cornmeal mush and sugar. They vary this slightly from time to time with other cereal foods, and when they feel a taste for it add a bit of meat, for neither is a strict vegetarian. The weekly expense bill for the two is as follows: Fourteen pounds of flour, graham and white, 56 cents; eight pounds of corn and oatmeal, 10 cents; four pounds of sugar, 28 cents; total, 94 cents. Salt and an occasional piece of meat brings this weekly average nearly to $1.

MEDICAL JURISPRUDENCE IN AMERICA IN THE NINETEENTH CENTURY.*

By Clark Bell, Esq, LL. D.,
President of the International Medico-Legal Congresses, New York, 1889; Chicago, 1893; Delegate from the Government of the United States to the Thirteenth International Medical Congress of 1900, at Paris; Honorary Member of the Medico-Legal Society of France, Etc., Etc.

Medical jurisprudence is more greatly indebted to the Italian scholars of the sixteenth century, and the preceding centuries, than to those of any other land.

That splendid diplomat, scholar, statesman, musician and physician, Paul Zacchias, was the physician to the Pope in 1620. His treatise, now in the library of the Medico-Legal Society in New York, could be read with profound interest, to see how far advanced was this learned and gifted man, in the elementary and fundamental truths of the science, as recognized to-day.

From the twelfth to the sixteenth centuries, Italy stood pre-eminent in every field of scientific study, and especially in medicine.

Prior to 1500 there were sixteen universities in Italy; while in France there were but six; in Germany, eight; in Great Britain, only two; so that Italy had then as many as England, France and Germany combined, and the supremacy of the Italian universities was above all comparison with the others.

This Italian superiority continued until after the sixteenth century, and it existed when Zacchias wrote and flourished.

It has been well said that "medical jurisprudence owes its power to knowledge derived from every branch of medicine; but the law determines how far this power shall be utilized in the administration of justice."

The superiority attained by Italy, that made her the home of science and arts, in the fourteenth, fifteenth, sixteenth and seventeenth centuries, was due to the more favorable laws, and the liberal and fostering influence of the Popes of Rome in these eras.

Germany felt this influence when, in 1533, the "Constitu-

*Contributed to the Thirteenth International Medical Congress of Paris, 1900.

tio Criminalis" of Charles V., of 1532, was first published. To the present day, the German Fatherland owes its pre-eminence in medical jurisprudence to favoring legislation, and the friendly fostering care of the governments. The "Constitutio Criminalis" of Charles V. made it obligatory on the courts to take the evidence of medical men in medico-legal cases.

For more than two centuries Germany has had an organization of medico-legal officials, who are required by law to be qualified by an especial education, not only to procure the medical facts needed by the courts, but to estimate their weight for the benefit of the courts.

In 1650 Machiavelli delivered the first course of lectures on legal medicine at the University of Leipzic, and he was succeeded by Bohn; and as early as 1720 professorships of forensic medicine were erected by the government of Germany.

The literature of the science was enriched, in the eighteenth century (1725), by the celebrated authors Valentini, Teichmeyer and Albertus, one hundred years later than the writings of Zacchias. These writers laid the foundation of that literature of forensic medicine for the German scholars, exceeding that of nearly every country, and which, in later years, in the nineteenth century, has been quickened by the clinical schools, the first of which was established at Vienna, at about 1830; at Berlin in 1833; at Munich in 1865. Germany owes her great advancement to the fostering hand of the government, and to favoring legislation.

France, from 1570 to 1692, also enacted laws which favored the study, culture and advancement of legal medicine, and the science progressed; but at the close of the seventeenth century, the medico-legal officials became hereditary, and the science languished until after the French Revolution.

Since 1790, however, no nation on the globe has surpassed or even equaled France in the culture and advancement of medical science and the arts; and from the era of the French Revolution, and under the reign of the great Napoleon, and those who have suceeeded him, France advanced, until she became the seat and centre of the highest civilization in the nineteenth century, which proud position she has continued to occupy.

The Exposition of 1889, and the splendid one which marks the close of the nineteenth century, well illustrate her place in the world of science and arts, and the advancing civilization of the world, as the twentieth century opens its portal to the brotherhood of man in all countries upon the globe.

During all these years of advancing supremacy in France, all was due to the splendid support given by the government, and by the generous laws of France, and forensic medicine has kept pace with the sister sciences there.

Chasseur, in 1790, was the first lecturer in legal medicine, and Mahon, in 1795, was the first professor of medical jurisprudence.

In Great Britain very little attention was paid to medical jurisprudence in the eighteenth century, and she transmitted to her American colonies laws that have been well stated by Prof. Stanford E. Chaille, in his centennial address before the International Medical Congress of September, 1876, intended as a review of the preceding one hundred years of forensic medicine, as "barbarously conspicuous for the absence of provisions to apply medical knowledge to the administration of justice, and Anglo-American law continues to be, in large measure, hostile to medical jurisprudence."

These words were spoken in 1876—twenty-five years ago. They properly describe the state of the law of Great Britain at that date, and show why in the American States this nineteenth century opened in America with the standard of forensic medicine trailing in the dust, when contrasted with France, Germany and Italy; but America, with this sad inheritance from the mother country, has not remained where she was placed in the first fifty years of the American national life.

Scotland should be exempt from these criticisms. In 1803 a chair of forensic medicine was founded in the University of Edinburgh. Dr. Duncan, the elder, was the first lecturer on medical jurisprudence, in 1801, and his son the first professor, in 1802.

While this university was chartered in 1682, it was not until 1726 that an English medical faculty was established, with lawful authority to confer degrees. Before 1726, and after 1705, a few honorary degrees had been conferred, but not by legal authority.

In each of the twenty-three medical colleges existing in England, Ireland and Scotland, in 1875, there was a regular teacher devoted to forensic medicine, on whom legal authority to confer a degree in state medicine was conferred, upon those at Cambridge, Oxford, Edinburgh and Dublin; but it cannot be said that medical jurisprudence, as a science, was practically taught outside of the University of Edinburgh, if there, except as to toxicology.

Scotland has kept alive, on her altar at Edinburgh, the science, and Prof. Ogston, and the Scotch scientists, have been among

the foremost of medico-legal jurists of Great Britain in the earlier years of the century.

The Registration Act was not passed in England until in 1858, and "Glenn's Manual of the Laws Affecting Medical Men," London, 1721, cited by Prof. Chaille, in his admirable address, from which I quote, freely states and details thirty-six laws, from 1850 to 1870, of which twenty-five were passed in the twenty years between 1850 and 1870. The medical profession never had legal recognition under English laws until 1858. No laws existed for the preparation of official medical experts.

The British bench never held medical men or medical expert evidence with the respect with which it was received in France, Germany and Italy, under the provisions of law; and there has been no legislation in England tending to utilize the aid of competent medical knowledge, in aid of the administration of justice, in the British Islands, save in Scotland.

At the opening of the nineteenth century the science of medical jurisprudence upon the American continent did not command that recognition in either profession of law or medicine that its importance demanded.

At this era, the science may well be said to be at its decadence in all the English speaking peoples of the world. In England, the works of Farr, Dease, Male and Haslem may well be said to reflect the progress and state of the science, and the American States cannot be said to have made any substantial advances in forensic medicine, having but recently emerged from that revolutionary struggle which established the American nation upon the principles of human rights enunciated in the Declaration of American Independence.

Dr. Benjamin Rush, of Philadelphia, one of the signers of that Declaration, was one of the most conspicuous of those who gave the science attention. He was Professor of Chemistry in the Philadelphia College of Medicine and the University of Pennsylvania, and his labors extended from 1769 until his death in 1813. He held the chairs of Theory and Practice of Medicine, and of the Practice of Physics. He left sixteen lectures, the last of which was delivered in 1810 at the University of Medicine, and a was devoted to the science of medical jurisprudence. Its knill features relate to mental states, testamentary capacity and titled responsibility in cases of crimes committed. hich

Dr. Thomas Cooper, who had been a judge in the co d not Pennsylvania, was a Professor of Chemistry and Mineral

"Taylor's Medical Jurisprudence" was universally recognized as the model standard, and superseded Beck, who had so long stood at the very front. It passed through a large number of American editions, and its twelfth American edition was completed in 1897.

Among medico-legal jurists who have been prominent, I should name in the last third of the century Chief Justice Charles Doe, of the Supreme Court of New Hampshire, to whom (more than all other American jurists combined) we are indebted for the overthrow, in many of the American States, of the innovation made in the law of England after the McNaughten case, making the knowledge of right and wrong the test of criminal responsibility of the insane.

His associate, Judge Ladd, of the Supreme Bench of New Hampshire, and Judge H. M. Somerville, of the Supreme Bench of Alabama, who wrote the prevailing opinion of the court of that State, asserting what has come to be known as the New Hampshire doctrine, are entitled to our tribute of praise and commendation. Among the eminent men of the bar who have taken part in the labors of the Society and in advancing its work may be named: Hon. David Dudley Field, Hon. E. A. Stoughton, Judge A. L. Palmer, of the Supreme Court of New Brunswick; Sir John C. Allan, Chief Justice of that bench; Judge W. D. Hardin, of Savannah, Ga.; Judge Charles P. Daly, and Mr. Austin Abbott. Of those whose labors have ceased, not to mention the lustrous and brilliant names of those still living, and among medical men: Dr. James C. Wood, Dr. Frank H. Hamilton, Dr. Carnochan, Dr. S. W. B. McLeod, and Dr. Fordyce Barker.

Consider the views of Chief Justice Charles Doe, of the Supreme Court of New Hampshire; Associate Justice Ladd, of the Supreme Bench of that State; Judge H. M. Somerville, of the Supreme Court of Alabama; Judge Montgomery, of the Supreme Court of the District of Columbia, and Judge Dillon, of Iowa, all members of the Medico-Legal Society; Shaw, of Massachusetts; Edmonds, of New York; Bell and Perley, of New Hampshire, in contrast with the language of the Lord Chancellor of England as late as 1862, who, in referring to insanity in the English House of Lords, declared that "the introduction of medical opinions and medical theories into this subject has proceeded upon the vicious principle of considering insanity as a disease," and he condemned the "evil habit that has grown up of assuming that it was a physical disease."

And it was less than 100 years prior to this utterance (1769) Lord Chancellor Blackstone said: "To deny the possibility, nay actual existence, of witchcraft and sorcery is to at once flatly contradict the revealed word of God," and also added, "And the thing itself is a truth to which every nation in the world hath in its turn borne testimony."

The following are among the eminent French collaborators in the work of the Medico-Legal Society: Dr. T. Gallard, Ex-Secretary of the Medico-Legal Society of France; Dr. Louis Penard, Ex-President of the Medico-Legal Society of France; Dr. Devergie, Ex-President of the Medico-Legal Society of France; M. Ernest Chaude, Ex-President of the Mexico-Legal Society of France; Dr. Devilliers, Ex-President of the Medico-Legal Society of France; Prof. Dr. Benj. Ball, author; Dr. Emile Hourteloup; Dr. Lunier; Dr. Briere du Boismont; Dr. Chevalier; Dr. Legrard du Saille; M. Hemar, Ex-President of the Medico-Legal Society of France; Dr. August Voisin, Dr. Carpentier, Prof. Dr. Luys, Marcel Briand, and Dr. Foville.

Living members of eminence identified with the progress of medical jurisprudence in America: Prof. Brouardel, Dr. Motet, Dr. Lutaud, Dr. A. Leblond, Dr. Magnan, Dr. Ritti, Dr. Christian, Dr. Bertillon, and Dr. Forel.

The following are deceased honorary members of the Medico-Legal Society: Prof. Francis Wharton, writer on international law; Dr. Devergie, President of the Medico-Legal Society of France; M. Barnier, President High Court of Cassation of France; Dr. Louis Penard, Ex-President of the Medico-Legal Society of France; Prof. Charcot, Paris; Sir James Fitz James Stephen, of London, England; Dr. Frank H. Hamilton, of New York; Hon. Charles P. Daly, of New York; Dr. John C. Bucknill, Chancellor's Visitor in Lunacy, London; Dr. D. Hack Tuke, of London; and Dr. Fordyce Barker, of New York.

Toxicology.

The most lustrous names among the great chemists of the American people are those of Prof. Wormley, of Philadelphia; Prof. John J. Reese, of Philadelphia; Prof. R. Ogden Doremus, Ex-President of the Medico-Legal Society of New York; Prof. Victor C. Vaughan, of the University of Ann Arbor, Mich., and Dr. Henry Leffman, of Philadelphia.

Prof. Theodore G. Wormley succeeded Prof. R. R. Rogers in the Chair of Toxicology in the Medical Department in the Uni-

versity of Pennsylvania in 1877, and he filled it with distinction until his death in 1897. His work upon "Micro-Chemistry of Poisons" is a monument of learning, and is universally regarded as a standard authority by the professions and the courts. His contribution to the International Medical Congress, in 1876, in Philadelphia, was "Medical Chemistry and Toxicology."

Prof. John J. Reese was born June 16, 1818, and he died September 4, 1892. He was the foremost medical jurist and toxicologist of his day in Philadelphia, and the author of a text-book on Medical Jurisprudence and Toxicology. He was President of the Medical Jurisprudence Society of Philadelphia, an active and honorary member of the Medico-Legal Society of New York, and he edited the seventh and eighth American editions of "Taylor's Medical Jurisprudence," and was a prolific writer on subjects connected with medical jurisprudence. He held the Chair of Medical Jurisprudence and Toxicology in the Auxiliary Department of Medicine in the University of Pennsylvania from 1865 to October, 1891.

Prof. Vaughan, of the University of Ann Arbor, is one of the most brilliant of the chemists of our era. He is a member of the Medico-Legal Society of New York.

Dr. Henry Leffman, of Philadelphia, was Lecturer on Toxicology at the Jefferson Medical College from 1875 to 1883, and Chemist to the Coroner of Philadelphia from 1885 to 1897. He edited the fourth edition of Prof. Reese's text-book on "Medical Jurisprudence and Toxicology."

Prof. R. Ogden Doremus is the Nestor of American chemists and toxicologists. He has held the Chair of Medical Jurisprudence and Toxicology in the College of the City of New York, and at Bellevue Medical College for a great many years. He was Chemist of the Medico-Legal Society for many years, and held the office of President of that body.

Prof. H. L. Mott, M. D., held the office of Chemist of that Society for some years prior to his untimely death.

George B. Miller, M. D., of Philadelphia, held the same office for a few terms; and Prof. Charles A. Doremus, a son of R. Ogden Doremus, now holds that office. Prof. W. B. McVey, of Boston, is and has been for some years Toxicologist of that Society.—From advance sheets "Medico-Legal Journal."

(*To be continued.*)

MEDICAL EXCERPT.

By T. P. Corbally, A. M., M. D.

Tracheotomy.—M. le Prof. Grancher (Gazette hebdomadaire, 2nd September), presented to the Académie de Médecine a very eulogistic report on a communication from Dr. Moure on a very interesting and practical subject, that of tubing in tracheotomy.

At what time after the operation of tracheotomy can the cannula be removed without danger? What causes the difficulty sometimes met with in fixing the tube? How should the tracheotomy be performed in order to avoid all the complications that sometimes attend the operation?

M. Moure shows by positive evidence that the proper place for section of the trachea is the first and second ring. He says that, generally, tracheotomy is made too high up, in the intero-crico-thyreoidean space or even on the cricoid cartilage.

When this cartilage is divided there is, in consequence of the separation of the two ends of the ring, a partial immobilization of the crico-arytenoidean articulations. On the other hand, in children especially, the cricoid is situated so near the sub-glottal region that the presence of the cannula soon leads to an inflammation of the adjacent mucous, sometimes even to a true pericondritis, the effects of which are added to the immobilization of the crico-arytenoidean articulations and cause an increased difficulty in the removal of the cannula.

Thus two causes, one *inflammatory,* the other *mechanical,* tend to prevent the restoration of the respiration in the larynx.

As a result of these difficulties and in many cases unavoidable conditions, when it is necessary to open the respiratory organ in the child or in the adult, the surgeon should always take the time to examine the advantages of selecting the inferior part of the thyreoid cartilage, or better, the cricoid ring, so that the incision may be made on the first or even the second ring of the trachea, but never on the cricoid cartilage.

This operation may involve more trouble for the surgeon, but it has the advantage of avoiding a stenosis of the glottis consequent upon tracheotomy upon a part of the larynx which should be treat-

ed with the greatest care. When this danger cannot be avoided the cannula should be allowed to remain in place as short a time as possible.

When, notwithstanding these precautions, symptoms of stenosis may occur, the first indication is to perform tracheotomy below the point first opened, then an effort should be made to restore a better condition by the very act of removing the foreign body from the cricoid. It may happen that the lower tracheotomy is not sufficient, then recourse must be had to dilatation of the larynx, tubing, etc., perhaps even to laryngo-fissure, median thyreotomy, so as to be able to remove the infiltrated tissue that impeded respiration.

M. Grancher congratulated M. Moure for having so exactly defined and so fully described a very important point in surgery by showing the dangers of tracheotomy arising from stenosis of the glottis, which is so frequently caused by section of this cartilage.

YELLOW FEVER.—The severity of the present epidemic of yellow fever in Cuba (La Habana Medica for August) is truly alarming.

In the year 1895 the number of cases was possibly greater, but the general character of the disease was comparatively much milder. In the present year, on the contrary, it has assumed the highest degree of severity; the mortality exceeding 30 per cent. The following figures, taken from the four principal institutions in Havana, for the eight months of the present year, from the first of January to the thirty-first of August, show the extent and the virulence of the disease. For the district of Dependientes, 136 cases, 38 deaths, 27.94 per cent.; "La Covadonga", 51 cases, 20 deaths, 39.21 per cent.; Del Centro Gallego, 38 cases, 12 deaths, 31.57 per cent.; Del Rey, 4 cases, 3 deaths, 75.00 per cent; total, 226 cases, 73 deaths.

Analyzing these figures, attention is especially called to the Quinta de Dependientes. In the Casa de Salud alone there were more cases, suffering with the vomita, than in the other three together, and with the fortunate result that the relative mortality was much less than in any of the others.

Yellow fever, as may be seen, continues to exceed all other pathological conditions in our locality; while the other diseases are sensibly becoming less, and with this condition the general mortality has improved.

To combat this disease it is not enough to devote attention to the general sanitary condition of the infected localities. The principal factor in the case is the necessity for a therapeutic agent whose action can be depended upon; but this unfortunately we do not now possess; we must look for relief to the therapeutic serum in the case.

BINOXIDE OF SODIUM.—M. Desgrez, a member of the Academy, and M. V. Balthazard, an interne of the hospitals, have presented to the Académie des Sciences, a communication of the highest interest on the purification of impure air by the binoxide of calcium.

Dr. Laborde had already presented, on the 24th of June, 1899, a year ago, with M. G. Jaubert, a statement of some experiments they had made in the regeneration of air, but he did not make known the chemical substance which enabled him to accomplish this wonderful regeneration. MM. Desgrez and Balthazard had also communicated with the Académie, but after M. Laborde, some experiments of the same kind, but they made known the nature of the substance they used to obtain the purification of the air. At that time they had only their experiments in the laboratory to communicate.

To-day the problem seems to be practically solved. The following is a communication which the Gazette hebdomadaire of the 2nd September takes from Comptes Rendus de l'Académie des Sciences:

"We presented to the Académie last year a means of regenerating confined and foul air, based on the decomposition of the binoxide of sodium by cold water. We pointed out that in this decomposition the oxygen then produced replaces that which has been utilized for respiration, while the soda formed simultaneously fixes the carbonic acid of the expired air. The reaction that takes place gives to the locality active oxydizing properties which destroy the toxines contained in the gas resulting from respiration.

"We made use of this reaction to obtain the survival of animals confined in closed places which, if left in the places without the regeneration of the air, they died in a short time.

"Having been successful in these experiments on animals we have extended them to man and obtained the same satisfactory results, and it is the result of these new experiments that we have now the honor to present to the Académie.

"In our first experiments on man we made use of quite a large apparatus which we have been obliged to simplify in order to render it portable. At present we think we have resolved the problem which we set out to accomplish.

"This apparatus consists of three parts:

"1. A distributor intended to secure the regular fall of the binoxide of sodium into the water. This is a prismatic box of steel divided into compartments by ten horizontal tablets placed one above the other. A clock-like movement opens at equal intervals each of these tablets holding the binoxide of sodium.

"2. A square box, also of steel, to hold water, is placed under the preceding apparatus. As the tablets or plates assume the vertical position they pour their binoxide into the water in this box; the oxygen and the soda then unite simultaneously, each to secure, in its own way, the initial regeneration of the atmosphere.

3. A small instrument moved by an electro-motor driven by an accumulator, determines the continual circulation of the air in the apparatus and the enclosed space in which the person, object of the experiment, is placed.

"The air becomes slightly warmed by its regeneration and we cause it to pass in its escape from the place of change over a refrigerator, which restores it to its original temperature. All these parts united are enclosed in a box of aluminum. To carry on our experiment we have had made a corset lined with cork and perfectly airtight. It is the adaptation of our regenerator to this vest and its successful use that we now place before the Académie."

The problem of the regeneration of impure air interests not only those using the corset, but all interested in submarine navigation; there is involved in this subject a matter of supreme interest and of national importance in the future. DR. E. MASSE.

HERPES AN INFECTIOUS DISEASE. (Jour. A. M. A.), E. Vidal.—By the term "herpes" Vidal expresses the attempt of the tissues to eliminate foreign bodies, whether it takes the form of an eruption on the skin or a morbid process in some internal organ or tissue. This manifestation is especially characteristic of la grippe. The bacillus penetrates into the organism by some unknown means; the struggle begins, fever lights up, the organism tries to expel the foreign bodies and the cycle is completed by the herpetic eruption within or without. This eruption produces solutions of continuity and any secondary germs which may happen

to be in the vicinity find an easy entrance through them into the tissues. If the herpetic eruption happens to be in the lungs, for instance, and the pneumococcus is present, secondary pneumonia is liable to develop, as the germs invade the capillaries, with possibly further infection by them of the arteries, peritoneum, kidneys and spleen. "This conception explains many otherwise inexplicable problems in infectious processes, their successive localizations on different organs, recurrences, etc., and should be accepted until the contrary is proved."

SANATORIA FOR CONTAGIOUS DISEASES NOT ALLOWED.—A wealthy young woman, Mdlle. Noualheir (Jour. A. M. A.), has established a refuge for incurables at Limoges. She makes periodical visits to Paris to collect inmates and brings twenty at a time, usually persons in advanced stages of consumption. The Gaz. Méd. de Paris states that the local authorities have found that tuberculosis has doubled in the vicinity of her refuge and have taken measures to close it and prohibit the maintenance of any sanatorium for contagious or epidemic diseases, public or private, inside the city limits.

HYDROZONE AND GLYCOZONE are urged by Dr. W. H. Vail (Medical Mirror, December, 1899), as the most effectual of all remedies in the treatment of gastric and intestinal disturbances. He atributes all gastric and intestinal disturbances to inflammation of the lining membrane of the stomach, and in order to allay this inflammation, he says, it must first be treated with antiseptics, then with medicaments that both heal and stimulate the mucous membrane that has become diseased. The most common cause for this state of inflammation is a greatly diminished quantity of gastric juices necessary for digestion; consequently, the food partaken of, instead of being assimilated, ferments, in other words, the peptic glands, whose function it is to secrete the gastric juice, do not perform their function properly. These must be restored to their normal state at once, which is accomplished by remedies that exert a stimulating effect upon them, and at the same time are non-toxic, else the trouble will only be aggravated. Hydrozone and Glycozone are the two remedies par excellence for these two purposes, and the success that I have obtained from the employment of them during the past few years will lead me to always use them in these disorders.

RAW MEAT FOR TUBERCULOSIS.

Professor Richet, the well known physiologist (Paris Letter, "Therapeutic Gazette," Aug. 15, 1900), made a communication recently on the use of extract of meat in the treatment of consumption. Raw meat as a food for tubercular patients had already been shown to be useful, but Dr. Richet and Dr. Héricourt have been experimenting upon dogs and have obtained some surprising results. The experiments were carried out in the following manner: Half a cubic centimeter of a virulent culture of tubercle bacilli was inoculated into the internal saphenous vein of a certain number of dogs weighing on an average twenty-three pounds. A certain number were used as controls of the result of inoculation, and others were given raw meat. The dogs of the first group all died in four or five weeks; the second group lived on an average 300 days, one living two and a half years, another nineteen months. Meat juice gave the same results, provided the meat was not cooked. About 120 grammes of raw meat was given each day. Dr. Richet says he considers that raw meat in this case had a special action not so much on the bacilli of consumption as on the toxins secreted; it would seem to act as an antitoxin. Another hypothesis is advanced by Dr. Richet. He establishes an analogy with what is seen in epilepsy while bromides are being administered, and thinks it might be said that the nerve cells were no longer capable of assimilating the tubercular poisons; positive chemiotaxis had been replaced by negative chemiotaxis. Dr. Chantemesse considers the effect was due to increased alimentation, but this theory is not accepted by Dr. Richet. Professor Bouchard says that food in general might have two actions; it could fix itself in certain cells, replacing former parts, or only serve to produce cellular disintegration and be thrown out of the organism. In one case there was energy produced; in the other a trophic action. These ideas might serve to explain why, by giving to carnivorous animals, which are to a certain extent immune, plenty of raw meat, one can increase their natural immunity. As a result of Richet's communication Dr. Martin, of Lyons, described in an article in the *Presse Médicale* the results he had obtained from using meat powder in the treatment of consumption. After two and a half months' treatment most distinct changes were to be noticed, and no morbid symptoms were apparent with the exception of those due to the cicatrization of former lesions.

EDITOR'S TABLE.

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☞All correspondence and exchanges, and all publications for review, should be addressed to the Editor, Dr. A. N. Bell, 337 Clinton Street, Brooklyn, N. Y.

YELLOW FEVER CONDITIONS OF HAVANA.

Major W. C. Gorgas, chief sanitary officer of Havana, in his report to the Adjutant General of the Division of Cuba, on the vital statistics of Havana for the month of September, says:

"The general death rate of this month makes a very favorable comparison with that of any September for the past ten years. The report shows that we had 519 deaths, which gives a rate of 25.68 per thousand for the year. This is considerably less than any September of the last ten years with the exception of last year, when we had 496 deaths. The low rate last year was largely due to the fact that in September Havana had just passed through a severe famine for two years and it is well known that famine and pestilence kill off the old, very young, and the invalids generally, and that for a short time after such calamities the death rate is considerably reduced. This, of course, must be taken into consideration. The deaths for September, 1899, of children under 1 year of age were 91; for this September, they were 124. This shows a large increase in the number of children under 1 year, due to the fact that during the preceding three years the birth rate had dropped to a very low point, and most of the children born had died through pestilence and famine. Taking in the items of yellow fever and deaths under 1 year of age, 34 in one case and 33 in the other, our deaths would be reduced by 77, which is the true rate as compared with the last three years.

"Tuberculosis shows a steady decrease, the rate last year being 3.92 per thousand; that for this year being 2.68 per thousand. We had fifty-two deaths from yellow fever. This compared with the number of deaths for the same months during the past ten years is much under them. The only years which had a smaller number were 1890, 1898 and 1899. The average for September for the past ten years is 72.40, which is very much greater than the number we give this month.

"The immigration has been very large and brings us a large quantity of non-immune material, but steps taken by the military government, for establishing a bureau of immigration, and to put an immigration settlement in a healthy locality outside of the city, will greatly obviate this.

"The amount of cleaning and sanitary work, as shown by the

report, has been very largely increased. We have now employed a total of 52 inspectors, constantly inspecting the condition of houses, and 240 other employees engaged in various ways in attending to the reports of these inspectors. While this department is doing a great deal of very useful work, and I think that the hygienic condition of the city has been, and will be, considerably improved by work on these lines, the permanency of the work is sharply limited by the constant need of a sewerage system. No permanent improvement can be effected, in my opinion, until Havana is given some sort of sewerage system, and the sooner this is done the better. It is by far the most pressing need that the sanitary department has before it at present."

However important sewerage is for Havana, *soil drainage* is infinitely more important; and considering that it would be much less costly than sewerage and could be accomplished much more rapidly, it is difficult to perceive why it should not proceed without delay and be accomplished during the coming winter months.

Sewerage can not be depended upon to rid Havana of yellow fever, or even to ameliorate it, so long as the soil drainage is obstructed, as it now is. The recent example of Vera Cruz in this respect, where the fever has prevailed as extensively since as it did before sewerage, should be kept in view.

Five years ago, when the improved sewerage system of that city was introduced and made much of as the anticipated means of doing away with yellow fever there, we made it the subject of adverse criticism, on account of the same local conditions as those which obtain in Havana: the walled-in yards and areas, obstructing air and sunshine as well as soil drainage, common to house construction throughout the city, and most of all the higher class dwellings in aristocratic neighborhoods. These conditions account for the more constant liability to and prevalence of yellow fever in dwellings thus *protected from healthful conditions* than in and among those in the less favored sections of the city which are more exposed to the wind and sunshine and to unobstructed soil-washing by the rainfall. The soil of Havana, like that of Vera Cruz, is loaded with putrescible matter with no means of riddance except by the process of destructive putrefaction. But this process is kept up by the constant accumulation of additional matter, insomuch as to be a sub-soil culture bed of microbes at all times, and of yellow fever germs in particular whenever favored by climatic conditions and susceptible subjects.

Similar constructive conditions obtain more or less in all of the old Spanish towns of America and wherever these are situated

in the yellow-fever zone they are subject to it. Besides our own observations in this respect, the circumstance is made strikingly manifest by the more extended and recently published observations of Dr. Wolfred Nelson. The "Home of Yellow Fever," generally, as recently described by him in Vol. XX "Twentieth Century Practice of Medicine," corresponds with the local conditions of Havana and Vera Cruz.

"In parts of Spanish America, South and Central, on the Pacific coast of Mexico, and in certain islands in the West Indies," he has observed similar and in some more aggravating, conditions. "The filthy conditions nourish and assist in maintaining the disease. Such places are, and no doubt will remain, poison centres. Quite apart from any attempt to bring about a better state of affairs, in the infected centres, the Spanish-American people on the old Spanish Main and in the West Indies should cease their unholy practices of evicting their dead either from their *bóvedas* system or from the earth. Their constant practices lead to the liberation of billions upon billions of death-dealing germs of yellow fever. Cuba and other old-time Spanish possessions, all export disease as regularly as they do their indiarubber, coffee, dye woods, and tobacco. . . . . The stamping out of yellow fever, in many of the centres named, seems to me to be an almost hopeless task. . . . . The responsibility centres along two lines: First, the apathy of those responsible for it; secondly, the indifference of the better informed people who have not attempted to suppress such death-dealing practices. . . . .The remedy to check (prevent) new crops of such poisons no doubt is cremation on the one hand, and the Holt quarantine system on the other."

THE ADIRONDACK TUBERCULOSIS HOSPITAL.

The site having been fixed, there seems to be no good reason why the dispute over its should longer continue. Dr Eugene Hodenpyl, of New York, in a letter to the New York *Times,* defends the choice of the site by the committee, on the ground that this particular region has been the favorite one heretofore, by rich and poor alike, on the advice of physicians, which has proved the most beneficial. Moreover, he contends, "it is the consensus of opinion of physicians who have practised in the Adirondacks that the amount of dampness which obtains in this region is not detrimental to the health of consumptives. Pneumonia is seldom observed, and diseases commonly ascribed as being due to exposure

to wet are less frequent than in many other parts of the State. The camps which are so frequently occupied by consumptives are almost invariably located on the banks of a lake. In fine, then, the trustees propose to locate their hospital in a region which for years has been regarded as a favorable one for consumptives, and where experience has demonstrated that the results obtained in properly selected cases compare favorably with those of almost any other climate in the world. Objection has been made, too, on the ground of expense of the proposed site. Doubtless other sites could have been bought for less money. It must be remembered, however, that a site suitable for the hospital must possess many advantages; and from what I know of the value of Adirondack property that which possesses many advantages can no longer be picked up for a trifle. Finally, the site has been objected to by some on account of its proximity to some of the summer camps and hotels! Lake Clear is three miles from Saranac Inn, on the Upper Saranac Lake, and is two miles in an air line through the woods from Upper St. Regis Lake, and is over five miles from that lake by road. There is abundant proof to show that at this distance there is not the slightest ground for apprehension on the score of possible infection of the inhabitants of these places. Again, it seems to me, that the proposed site is sufficiently removed from the homes of summer residents, so that no reasonable objection can be made that the institution may detract from the attractiveness and value of property. Indeed, I was told last summer by one of the trustees that no site would be considered which was liable to offend in any way surrounding property owners. A number of otherwise desirable sites were condemned for this reason alone. The trustees have examined personally almost every possible site in the Adirondacks, spending a good deal of time in so doing. Politics, the schemes of individuals with land to sell, etc., had no place in this board. For my part, I believe they have acted wisely, and that, instead of criticising the State, the poor consumptive and the neighboring property-owner have good reason to commend the work already accomplished for the New York State Hospital."

TENANTS' RIGHTS AND LANDLORDS' OBLIGATIONS.

These were aptly illustrated in Brooklyn recently in the case of an unappreciative landlady. The comfort and health of her tenants, hitherto, had been of no concern, while she was particu-

larly punctilious in the observance of rent dues. Her one ambition has been to get the biggest returns from the least outlay possible from her real estate holdings, and she gave little or no heed to tenants' reports of needful repairs. But she recently got hold of one tenant who taught her a deserved lesson. She wouldn't fix the plumbing in his apartments. It would have cost her perhaps $10. It was old-fashioned, offensive and disease breeding. He took the matter to the Board of Health. An inspection showed that the plumbing work all through the house required overhauling and improving. She was told to do it forthwith. She demurred and was informed that the house would be vacated within a certain time if the work was not done. Then she gave orders to do it. Now, what she has been forced to do will cost her ten times as much as if she had done it voluntarily. Cases of this kind are less frequent than they should be in Brooklyn. They would be more frequent if tenants generally knew their rights.

DIPHTHERIA AND MILK SUPPLY.

Dr Chauncey B. Biggs, of Tompkins County, gave some details (New York State Medical Association, Medical News), of twenty-eight epidemics of diphtheria, the origin of which had been traced to the milk supply. Of these ten followed the distribution of milk that had been handled by some one connected with a family in which diphtheria existed. Eighteen epidemics were reported in which the source of infection seemed to be the existence of chapped teats and ulcerated mammæ in the cow. In England, according to Dr. Lennox Browne, diphtheria of the lacteal structures of the cow is called chapping. In the District of Columbia three milk epidemics of diphtheria were traced in which a dairy-maid, a dealer, and a milk-wagon driver were affected by diphtheria. From Germantown an epidemic is reported in families of good sanitary surroundings who had no intercourse with one another and whose only community of interest was the same milkman. In such epidemics the milk-drinkers in a family are the only ones attacked originally. Members of families who drink only boiled milk escape.

CONSTITUTIONALITY OF PURE FOOD LAWS.

The Supreme Court of Ohio holds, in State vs. Capital City Dairy Company ("Journal American Medical Association") that it is within the scope of the police power of the State to regulate

the manufacture and sale of articles of food, even though the right to manufacture and sell such articles is a natural right guaranteed by the constitution. Especially does it here hold that the police power of the State is properly exercised in the prevention of deception in the sale of dairy products, holding valid a number of Ohio statutes passed for that purpose and to preserve the public health, as it is stated. And, in this connection, it particularly affirms that where the article sought to be regulated may easily be manufactured so as to be harmful, and thus result in fraud upon and injury to the public, the police power is properly exercised in the regulation of the manufacture and sale of such article by such requirements as will tend to insure the public against fraud and injury. Nor does it consider that there is any question whatever in regard to the power of the State to compel a sample for analysis of any article of food. Besides all of which, it is of practical interest, in this day of corporations, to note that it is further held that the mere fact that the criminal laws of the State provide for the punishment, by fine, of those who offend against these pure-food laws is not a bar to a proceeding to oust a corporation engaged in violating them from the exercise of its right to be a corporation.

CATFISH "SALMON."

A petition was presented October 8, ult., to the police jury of Concordia Parish, La., for seining privileges, brought to light by the fact that thousands of tons of spoonbill catfish are caught in the waters of that parish every year, canned and chemically treated, shipped East, and sold in the market as salmon. The petition made known this fact, and further showed that the desire of the petitioner was to continue the practice of converting catfish into salmon on a grand scale. He wants to erect a large factory for this purpose.

This industry has been prospering for years in a quiet way, though the attention of the Government was once called to it, and an investigation was made. So perfect is the imitation that it can only be detected by the small pieces of blue skin that get into the cans through the carelessness of the packers.

RAILROAD HYGIENE.

The management of the Rock Island Railroad is reported to have adopted plans for a campaign for the extermination of all dis-

ease-breeding microbes that might stake temporary claims on the various properties of the company, and it will lose no time in carrying out the plans. The deodorizer will be the weapon it will use, and the ammunition—death-dealing disinfectants—will be fired into cars, offices, stations and shops.

The war will be waged on all parts of the system, and those who will direct the campaign declare that there will be no cessation of hostilities until there is not a germ left to fly a flag of truce, and the possibility of a microbe's nefarious operations is precluded. After much experimenting the management of the road has adopted a hermetically sealed, automatic and economically distributing disinfectant. It will be placed wherever germs are likely to lie in wait for the unsuspecting public. Special attention, it is said, will be paid to quarters set aside for immigrants.

This is what an official of the road recently said upon the subject:

"There will be no germs of disease or bad and offensive odors lurking around the Rock Island property after the plans are carried out. Railroad properties are hard to keep clean, but we believe that our road will be the acme of hygienic cleanliness after a time. A great deal of money will be spent in carrying out the plan."

SELECTION OF MEMBERS OF BOARDS OF HEALTH.

From an examination of the history of the legislation in the State of New York in relation to appointments of boards of health in cities, the special term of the Supreme Court of New York, Albany County, says, in re City of Rensselaer, that it seems clear that the Legislature still intended by its latest statute to make the selection of the members of the boards of health the joint action of the mayor and the common council; the mayor to nominate, and the common council, in its discretion, to appoint or confirm his nomination. If the common council does not confirm or appoint the men nominated by the mayor, it goes on to say, it would seem to be the mayor's duty, in his discretion, to send in other names, and to continue sending such names until an appointee is named who will be appointed by the common council. Hence, it here denies a peremptory writ of mandamus to compel the common council and aldermen of the above city to convene and forthwith appoint the mayor's nominees as commissioners of health of said city.

MENTAL SANITATION.

Dr. R. W. Bruce Smith, physician to the Brockville Asylum for the Insane ("Medical News"), contributed a scientific paper (Canadian Medical Association, September 14, 1900) with the above title. It was a plea for prophylaxis in insanity, and he thought that much would be accomplished in this direction in the twentieth century. He stated that insanity is on the increase in Canada and thinks it can be duly ascribed to the fact that there have been no preventive measures employed. In order to accomplish good in this direction we must seek either to lessen the demands on or to strengthen the resisting power of the brain. He condemned intermarriages in families and also amongst those of a deranged mentality; and as fifty per cent. of the cases of insanity are hereditary, the descendants of these should be careful in contracting marriage-ties. He referred to a portion of one county in Ontario alone where indiscriminate marriage and intermarriage have become most fruitful of insanity; and he has seen several members of one family from that locality inmates of the same institution at the same time. He considers that the day may yet dawn when we will give the same attention to the rearing of children as we now give to the breeding of horses. Speaking of farm-life and the tendency it has to melancholy, he thought this class of the community should receive education in participating more in the enjoyments of life and not continue to rot in domesticity. An upheaval in the sentiment and surroundings of the rural homes would work wonders in prophylaxis principles.

A LAWYER DISBARRED.

Recently ("Journal American Medical Association") a lawyer of Chicago misappropriated—that is, appropriated to himself—twenty-seven dollars belonging to a client. For this he was sentenced to pay a fine and was "forever disbarred from practicing in the courts of Illinois." No one seems to have found fault with the verdict; the newspapers endorsed the judge, who, in rendering the verdict, said that the legal profession must be purged of those who would stoop to such dishonest and despicable acts. Neither have we any fault to find, for while it seems rather severe of this disbarment, with approval, appeared advertisements of quack doctors. In some of these advertisements those suffering from incurable diseases are promised restoration to health; in

others, old men whose eyes are growing dim with senile cataract are guaranteed perfect sight by means of internal medicines. The fears of indiscreet youths—who think they are ill but are not—are preyed on by these barnacles on the medical profession, the advertising quacks. This Chicago lawyer who was turned out of his profession for stealing twenty-seven dollars is an angel compared to some of these. He only swindled his client out of a few paltry dollars; they not only do this but do so by preying on the afflicted, whose confidences they have obtained by false promises and by false pretences. These men write M. D. after their names; they claim to belong to a profession which certainly should be purged of its vicious adherents as much as should the legal profession. And yet, imagine the hue and cry that would be raised by the newspapers if the medical profession should attempt to purge itself of those who are using it as a cloak for dishonest acts and for swindling.

MORTALITY AND MORBILITY REPORTS AND REVIEWS.

STATE OF NEW YORK.—The sanitary districts into which the State is divided are as follows: *Maritime District*, includes New York, Brooklyn, Long Island, Staten Island and Westchester County; *Hudson Valley District*, all the counties on either side of the Hudson River, except Westchester, to and including Albany and Rensselaer; *Adirondack and Northern District*, the northern section of the State, the counties of Washington, Warren, Hamilton, Essex, Clinton, Franklin, St. Lawrence, Jefferson and Lewis; *Mohawk Valley District*, Schenectady, Schoharie, Saratoga, Montgomery, Fulton, Herkimer and Oneida Counties; *Southern Tier District*, the seven counties along the southern border of the State; *East Central District*, Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga and Cortland Counties; *West Central District*, Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee and Wyoming Counties; *Lake Ontario and Western District*, Oswego, Wayne, Monroe, Orleans, Niagara and Erie Counties.

The State Board of Health Bulletin for August, 1900, reports the number of deaths for the month to be 11,047—594 less than the preceding month, the death rate having decreased from 19.5 to 18.5.

Maritime District, 3,935,000: Total deaths, 6,288; death rate, 18.8; deaths under five years, 2,800; from zymotic diseases, per

1,000 from all causes, 211; from cerebro-spinal meningitis, 29; typhoid fever, 69; malarial diseases, 27; smallpox, 2; scarlet fever, 14; measles, 23; erysipelas, 8; whooping-cough, 49; croup and diphtheria, 142; diarrhœal diseases, 967; acute lung diseases, 427; consumption, 658; cancer, 204.

City of New York, 3,654,594: Total deaths, 5,811; death rate, 18.7; deaths under five years, 2,584; from cerebro-spinal meningitis, 29; typhoid fever, 67; malarial diseases, 26; smallpox, 2; scarlet fever, 14; measles, 23; erysipelas, 6; whooping-cough, 47; croup and diphtheria, 129; diarrhœal diseases, 845; acute lung diseases, 409; consumption, 619; cancer, 193.

Borough of Manhattan, 2,007,241: Total deaths, 3,117; death rate, 18.9; deaths under five years, 1,362; from cerebro-spinal meningitis, 15; typhoid fever, 31; malarial diseases, 8; smallpox, 2; scarlet fever, 7; measles, 14; whooping-cough, 24; croup and diphtheria, 52; diarrhœal diseases, 423; acute lung diseases, 260; consumption, 325; cancer, 110.

Borough of the Bronx, 174,370: Total deaths, 340; death rate, 23.0; deaths under five years, 121; from cerebro-spinal meningitis, 2; typhoid fever, 6; malarial diseases, 4; smallpox, 2; scarlet fever, 4; measles, 2; whooping-cough, 3; croup and diphtheria, 6; diarrhœal diseases, 38; acute lung diseases, 12; consumption, 74; cancer, 15.

Borough of Brooklyn, 1,267,258: Total deaths, 1,934; death rate, 18.1; deaths under five years, 912; from cerebro-spinal meningitis, 9; typhoid fever, 26; malarial diseases, 5; scarlet fever, 3; measles, 6; erysipelas, 2; whooping-cough, 15; croup and diphtheria, 56; diarrhœal diseases, 318; acute lung diseases, 117; consumption, 181; cancer, 60.

Borough of Queens, 136,559: Total deaths, 270; death rate, 23.3; deaths under five years, 118; from cerebro-spinal meningitis, 3; typhoid fever, 3; malarial diseases, 8; measles, 1; whooping-cough, 2; croup and diphtheria, 12; diarrhœal diseases, 38; acute lung diseases, 12; consumption, 28; cancer, 2.

Borough of Richmond, 60,266: Total deaths, 150; death rate, 23.7; deaths under five years, 71; from typhoid fever, 1; malarial diseases, 1; whooping-cough, 3; croup and diphtheria, 3; diarrhœal diseases, 38; acute lung diseases, 8; consumption, 11; cancer, 6.

A Special Laboratory for the Study of Plague.

Soon after the occurrence of the plague in Glasgow, the Board

of Health took action to have a special laboratory built for and wholly devoted to the study of the germs of bubonic plague.

It is located on the East River front in a distant part of the grounds of the Willard Parker Memorial Hospital, where contagious diseases are treated, and it is to be so constructed that no germ shall escape. Its windows, screened to keep out flies and mosquitoes, will be placed only in the safer parts of the building. The walls, of steel and cement, will be rat proof, and the surface of the interior will be so smooth that there will be no pinhole in which a stray germ may lurk. The building will have its private sewer to the river, and even that will have a patent disinfecting trap attached. The doors will be double, and stringent regulations will be framed which will exclude from the laboratory every person except its own staff. The iceman will call, but he will fill the iceboxes from the outside without even a peep inside the building.

The laboratory is to be a two-story building, and a small one, only 25 by 50 feet, and it will serve a double purpose. The ground floor will be taken up principally by eight stalls for the horses which will supply the anti-pest serum. In this floor there will be comparatively little danger of infection, but all the same, it will be barred to everybody but the bacteriologist and his helper, under whose care the horses will be. It is on the floor above that the plague germs will be kept and experiments undertaken, and the two floors do not communicate. A staircase from the outside of the building will lead to the top floor. At one end of this will be the room in which are the healthy animals, rabbits, rats and guinea pigs, destined for plague experiments. After inoculation they will be transferred to another room at the other end of the building. When dead their bodies will be sterilized, then cremated. No unlucky rat, rabbit or guinea pig that ever enters the building will ever leave it except in ashes. The rest of the space in the top story will be taken up by the culture room, sterilizers, in which the preventive serum will be stored, and two rooms for microscopical work.

One of the few things made clear by studies of the bubonic plague on this side of the world is that the only way to diagnose positively cases of the disease is from a microscopical examination of serum taken from the patient. The present outbreak of the plague in Glasgow proceeded for days before the nature of the disease was recognized. A dock laborer's wife was the first victim stricken. She died, it was believed, of pneumonia, and a wake was

held over her body. Two days later three persons who had attended the wake were stricken, and in these cases for the first time the presence of the bubonic plague was suspected. One of these died, two recovered, but they had spread the infection before it had been positively demonstrated that the disease from which they suffered was the dread bubonic plague.

Hudson Valley District, 700,000: Total deaths, 1,070; death rate, 18.0; deaths under five years, 336; from cerebro-spinal meningitis, 4; typhoid fever, 29; malarial diseases, 4; scarlet fever, 1; measles, 4; whooping-cough, 7; croup and diphtheria, 24; diarrhœal diseases, 239; acute lung diseases, 38; consumption, 101; cancer, 38.

Albany, 100,000: Total deaths, 116; death rate, 14.0; deaths under five years, 22; from typhoid fever, 4; croup and diphtheria, 2; diarrhœal diseases, 16; acute lung diseases, 4; consumption, 17; cancer, 7.

Adirondack and Northern District, 390,000: Total deaths, 474; death rate, 15.0; deaths under five years, 134; from cerebro-spinal meningitis, 2; typhoid fever, 11; measles, 4; croup and diphtheria, 5; diarrhœal diseases, 104; acute lung diseases, 18; consumption, 48; cancer, 21.

Mohawk Valley District, 395,000: Total deaths, 560; death rate, 16.5; deaths under five years, 172; from cerebro-spinal meningitis, 3; typhoid fever, 9; malarial diseases, 1; scarlet fever, 1; measles, 11; erysipelas, 1; whooping-cough, 9; croup and diphtheria, 10; diarrhœal diseases, 119; acute lung diseases, 17; consumption, 44; cancer, 25.

Utica, 55,000: Total deaths, 120; death rate, 25.8; deaths under five years, 43; from typhoid fever, 2; scarlet fever, 1; measles, 9; whooping-cough, 3; diarrhœal diseases, 26; acute lung diseases, 11; consumption, 6; cancer, 8.

Southern Tier District, 425,000: Total deaths, 491; death rate, 14.5; deaths under five years, 128; from cerebro-spinal meningitis, 4; typhoid fever, 12; malarial diseases, 2; scarlet fever, 2; measles, 1; erysipelas, 1; whooping-cough, 1; croup and diphtheria, 4; diarrhœal diseases, 84; acute lung diseases, 14; consumption, 34; cancer, 21.

Binghamton, 45,000: Total deaths, 48; deaths under five years, 10; from croup and diphtheria, 3; diarrhœal diseases, 6; acute lung diseases, 1; consumption, 6; cancer, 3.

Elmira, 40,000: Total deaths, 49; deaths under five years, 16;

from cerebro-spinal meningitis, 1; typhoid fever, 2; whooping-cough, 1; diarrhœal diseases, 9; acute lung diseases, 1; consumption, 5; cancer, 3.

East Central District, 415,000: Total deaths, 534; death rate, 15.5; deaths under five years, 60; from typhoid fever, 12; measles, 3; whooping-cough, 6; croup and diphtheria, 3; diarrhœal diseases, 100; acute lung diseases, 9; consumption, 41; cancer, 38.

Syracuse, 120,000: Total deaths, 168; death rate, 16.5; deaths under five years, 60; from typhoid fever, 4; measles, 1; whooping-cough, 4; diarrhœal diseases, 38; acute lung diseases, 2; consumption, 41; cancer, 12.

West Central District, 325,000: Total deaths, 396; death rate, 15.0; deaths under five years, 89; from typhoid fever, 1; measles, 1; whooping-cough, 1; croup and diphtheria, 3; diarrhœal diseases, 66; acute lung diseases, 14; consumption, 32; cancer, 21.

Lake Ontario and Western District, 890,000: Total deaths, 1,234; death rate, 16.0; deaths under five years, 433; from cerebro-spinal meningitis, 5; typhoid fever, 31; malarial diseases, 2; scarlet fever, 4; measles, 2; erysipelas, 1; whooping-cough, 12; croup and diphtheria, 7; diarrhœal diseases, 306; acute lung diseases, 40; consumption, 89; cancer, 68.

Buffalo, 370,000: Total deaths, 509; death rate, 14.5; deaths under five years, 203; from cerebro-spinal meningitis, 3; typhoid fever, 13; malarial diseases, 1; scarlet fever, 2; whooping-cough, 5; croup and diphtheria, 2; diarrhœal diseases, 134; acute lung diseases, 14; consumption, 32; cancer, 32.

Rochester, 180,000: Total deaths, 220; death rate, 15.9; deaths under five years, 68; from typhoid fever, 4; whooping-cough, 3; croup and diphtheria, 1; diarrhœal diseases, 52; acute lung diseases, 14; consumption, 17; cancer, 9.

CALIFORNIA. — Sacramento, October, 12, 1900. Dr. W. P. Mathews, Secretary of the State Board of Health, who has recently returned from a trip through the mountain counties, where he has been in consultation with the various boards of supervisors, in order to insure proper precautions against the spread of smallpox in case it should be introduced into the State during the coming winter, arrived in Sacramento yesterday, and in an interview with a "Record-Union" reporter said: "I find that the State is practically free from every kind of contagious disease, and that it was never better, judging from a sanitary and hygienic standpoint.

Los Angeles, 103,000: Total mortality in August, 131; death rate, 15.2; deaths under five years, 27; from cerebro-spinal meningitis, 5; typhoid fever, 2; malarial diseases, 1; diphtheria, 3; diarrhœal diseases, 3; acute lung diseases, 13; consumption, 18; cancer, 9.

COLORADO.—Denver, 133,859. Report for September: Deaths, 197; death rate, 17.64—excluding deaths from phthisis contracted elsewhere, 14.64; deaths from typhoid fever, 11; tuberculosis, 41; other communicable diseases—1 to 2—14; cancer, 6. Cases of infectious diseases reported: Diphtheria, 14; scarlet fever, 50; typhoid fever, 27; smallpox, 9.

CONNECTICUT.—The State Board of Health Bulletin reports for August: Total deaths, 1,642, in 168 towns, with an aggregate population of 906,451. This was 59 more than in July, and 260 more than in August of last year, and 298 more than the average number of deaths in August for the five years preceding. The death rates were, 21.9 for the large towns, 21.1 for the small towns, and 21.7 for the whole State. There were 706 deaths under five years. From cerebro-spinal meningitis there were 7 deaths; typhoid fever, 36; malarial diseases, 16; scarlet fever, 2; measles, 2; erysipelas, 3; whooping-cough, 18; croup and diphtheria, 18; diarrhœal diseases, 504; acute lung diseases, 42; consumption, 111.

DISTRICT OF COLUMBIA.—278,577: Report for the five weeks ending September 29: Total deaths, 478; death rate, 17.7; deaths under five years, 172; from typhoid fever, 31; diphtheria, 10; diarrhœal diseases, 59; acute lung diseases, 21; consumption, 75; cancer, 14.

INDIANA.—The Secretary of the State Board reports total number of deaths in Indiana during August was 3,221, an increase over July of 289, and over June of 969. The death rates for the three months were: June, 10.4; July, 13.1; August, 14.3. The increase in deaths during August was mainly among the children. In July the number of deaths under one year was 674, and in August, 779, an increase of 105, or 15.6 per cent. From one to five inclusive, the number of deaths in July was 374, and in August 417, an increase of 143, or 38 per cent. The old people did not suffer so much as the babies, the figures for those of 65 and over being: July, 598; August, 618, an increase of 20, or 0.033 per cent. The typhoid deaths increased in August 76 over July, the figures being respectively 140 and 64, making a per centum increase of 118.7.

Diphtheria also shows an increase in August, the July deaths from this disease numbering 12, and for August 29, an increase of 17, or 141 per cent. The diphtheria deaths are expected to increase in September, on account of the opening of the schools. This is because infected children will have opportunity to communicate the disease. Tuberculosis kept on its even way, destroying only twenty less people in August than it destroyed in July; the figures being: July, 262; August, 242. Croup, scarlet fever and measles caused respectively four, two and two deaths, while to whooping-cough 42 deaths are credited. Pneumonia causes a surprise with 54 deaths, as this disease is exceedingly rare in summer time. Diarrhœal diseases, which are simply poisoning, caused 600 deaths, an increase over July of 11.5 per cent. If all foods were properly cared for and prepared this awful destruction by diarrhœal diseases would almost cease. Child-bed fever caused 11; cancer 81, and violence 145 deaths. There were no smallpox deaths in August, and only five cases.

KANSAS.—Dr. W. B. Swan, Secretary of the State Board of Health, reports smallpox during the month of September in Atwood, 4 cases; Crawford County, 4 cases; Cherokee County, about 3 cases; Lawrence, 1 case; Shawnee County, 3 cases; Topeka, 2 cases; total, 17 cases.

LOUISIANA.—New Orleans, 300,000—90,000 colored. Report for August: Total deaths, 485—187 colored; death rates, white, 14.7—colored, 24.9; total, 17.4; deaths under five years of age, 105—39 colored; from cerebro-spinal meningitis, 2; typhoid fever, 5; malarial diseases, 15; scarlet fever, 1; smallpox, 13; diphtheria, 1; diarrhœal diseases, 15; acute lung diseases, 24; consumption, 62; cancer, 9.

MAINE, and especially the forest region of Maine ("Sanitary Inspector" for August), is at present receiving very favorable consideration as a place for the cure of consumption. For some years some physicians outside of this State have been sending patients with this disease into the Maine forests with good results, and an association whose purpose it is to advise consumptive patients in regard to suitable places for the climatic cure of their malady is now turning its attention seriously to Northern Maine. That is a sensible move to cure our consumptives in our own New England climate, especially those who are not well to do, whether they send them to Maine or not. It is a move which is in line with the teachings of the experience of the sanitariums, which have done

much to overthrow many former notions about the climatic requirements for consumptives.

MARYLAND.—Baltimore, 541,000. Report for August: Total deaths, 959—203 colored; death rates, whites, 19.6—colored, 31.2; total, 20.6; deaths under five years, 365; from typhoid fever, 37; scarlet fever, 2; measles, 1; malarial diseases, 8; croup and diphtheria, 11; diarrhœal diseases, 216; acute lung diseases, 30; consumption, 93; cancer, 25.

MASSACHUSETTS.—The prevalence of diphtheria in Brookline, as reported in October number, was, by error in reports received, overstated; there were but 14, instead of 40 cases. And at time of latest report (September 22) received at the time of this writing: "The spread of diphtheria seems to have been checked. During the past 10 days there have been only eight new cases. The new temporary hospital for diphtheria patients has been opened and there are six persons under treatment there."

MICHIGAN.—The Secretary of the State Board of Health reports for the month of September, 1900, compared with the preceding month, intermittent fever, bronchitis and dysentery were more prevalent; influenza, typhoid fever, remittent fever, inflammation of bowels and erysipelas much more prevalent, and measles and whooping-cough much less prevalent.

Reports from all sources show consumption reported present at 6 places less; typhoid fever at 80 places more; scarlet fever at 3 places less; diphtheria at 27 places more; measles at 46 places less; whooping-cough at 25 places less; cerebro-spinal meningitis at the same number of places, and smallpox at 4 places less, in the month of September, 1900, when compared with the preceding month.

For Consumptives and Their Friends.

In the tenth edition of "Instructions to Consumptives and Their Friends," now being issued by the State Board of Health, we find in concise form a wealth of information and suggestion which should be brought to the attention of every thinking person, as every one is more or less directly interested in the restriction of "the great white plague." On this small leaflet we find a store of reasonable, well-grounded advice of vital value to the infected as well as to the uninfected. It teaches the consumptive to destroy his sputa, and thereby help to save his friends, never to swallow his sputa, thus preserving himself from reinfection, and improving his chances of recovery, and *then, consumption is not necessarily fatal.*

Uninfected persons should take every precaution to avoid contact with the saliva of consumptives, and especially, not to inhale the infected dust of dried saliva. Householders and all others are reminded of the importance of prompt notification of every case of the disease to the local health officer, a prime necessity in public-health work; failure to promptly notify the health officer renders householders liable to severe penalties, which are not incurred if the attending physician makes the report.

It will be observed that the measures recommended by the State Board are not harsh; the efforts are designed to aid and to be in the interest of the consumptive as well as of all other persons.

The number of deaths in the State in September was 3,319; death rate, 16.7; an increase of 365 over the number for August, and of 586 over September, 1899. Deaths of infants under 1 year of age, 1,020; 1 to 4 years, 352, and 692 of persons aged 65 years and over. Deaths from the more important causes were as follows: Pulmonary consumption, 146; other forms of tuberculosis, 49; typhoid fever, 136; diphtheria and croup, 44; scarlet fever, 17; measles, 2; whooping-cough, 9; pneumonia, 83; diarrhœal diseases of children under 5 years of age, 791; cancer, 124; accidents and violence, 129. There was an increase to mortality from pulmonary consumption, typhoid fever (which had exactly twice as many deaths in September as in August), diphtheria and croup, and diarrhœal diseases of children under 5 years. The latter increased over 30 per cent. above the mortality of the preceding month.

"Baker Frozen Out!"

Incredible as it must appear to sanitarians everywhere—for the reputation of Dr. Baker as one of the most progressive and successful sanitarians for a generation is coextensive with sanitary knowledge—comes the announcement (Grand Rapids "Press," October 13) that the "Michigan State Board of Health bounces its veteran secretary."

"What appears to be the first step in the programme outlined was taken last night at a meeting of the board, attended only by Dr. Belknap, Dr. Collins Johnston of Grand Rapids, Dr. D. A. MacLauchlin of Detroit and Judge A. V. McAlvay of Manistee, the absentees being President Frank Wells of Lansing and Prof. Delos Fall of Albion. The following resolution was offered by Judge McAlvay, and adopted by a unanimous vote:

" 'Resolved—That the secretary of this board, Henry B. Baker, be hereby requested to tender this board his resignation as such

secretary, to take effect January 1, 1901, and that such resignation be placed by him in the hands of the president of this board on or before November 10, 1900; and that the president be hereby directed on the last mentioned date to notify each member of this board whether such resignation has been received by him.' "

The context of this announcement indicates a connivance by Governor Pingree, in recent appointments to membership of the board known to be inimical to Dr. Baker, to fill vacancies by expiration of the terms of accomplished members who have long served.

Detroit, September 22, 1900.—Typhoid fever is increasingly prevalent. While the Board of Health has been quarreling about trivial matters, the disease has steadily gained ground, until now, according to the general opinion of the physicians, there is a serious epidemic. In the hospitals there are 20 cases under treatment, 10 patients being at St. Mary's hospital alone. The city physicians in their various districts are caring for 27 indigent patients, while the health office records show 17 cases not included in the foregoing. From these sources alone it appears that 64 cases have been reported within the past few days, but, as City Physician Gorenfio points out, there is hardly a busy practitioner in the city who is not attending to at least one or two cases.

Health Officer Baker, when asked about the epidemic, said he was too busy to discuss it. "I may have something to say on it a little later, but not now."

In the records of the health office (in which, by the way, a very small number of the physicians have reported their cases) there are 17 cases reported for the month of July and 45 in August. This increase, however, is made to appear insignificant when compared with the enormous number of cases now current.

MINNESOTA.—Minneapolis, 240,000: Total deaths in August, 209; death rate, 8.84; deaths under five years, 78; from cerebro-spinal meningitis, 1; typhoid fever, 7; diphtheria, 3; scarlet fever, 1; diarrhœal diseases, 25; acute lung diseases, 10; consumption, 20; cancer, 12.

St. Paul, 165,000: Total deaths in August, 155; death rate, 11.2; deaths under five years, 56; from typhoid fever, 4; scarlet fever, 1; diarrhœal diseases, 18; acute lung diseases, 4; consumption, 20; cancer, 7.

MISSOURI.—St. Louis, 575,200—37,000 colored: Total number of deaths during the month of August, 1900, 800; death rate,

16.69; death rate of the colored population, 28.53; deaths from zymotic diseases, 180; diphtheria and croup, 29; typhoid fever, 20; malarial fever, 20; diarrhœal diseases, 89; other zymotic diseases —1 to 9—26; phthisis, 80; cancer, 21.

NEW HAMPSHIRE.—Sanitary Bulletin, October. For the year 1899 there were reported to the Department of Vital Statistics of New Hampshire, 8,118 births, 3,741 marriages, and 7,045 deaths, the latter being a rate of 17.27 per each 1,000 of the population, as calculated upon the census returns.

NEW JERSEY.—Hudson County, 398,960. Report for August: Total deaths, 665; death rate, 20.0; deaths under five years, 296; from cerebro-spinal meningitis, 1; typhoid fever, 9; croup and diphtheria, 12; scarlet fever, 3; whooping-cough, 5; diarrhœal diseases, 73; acute lung diseases, 30; consumption, 79.

Newark, 250,000. Report for five weeks ending September 29: Total deaths, 429; death rate, 16.8; deaths under five years, 282; from typhoid fever, 8; diphtheria, 5; diarrhœal diseases, 49; bronchitis and pneumonia, 31; consumption, 46.

Paterson, 97,344. Report for August: Total deaths, 171; death rate, 19.4; deaths under five years, 69; from cerebro-spinal meningitis, 1; typhoid fever, 2; croup and diphtheria, 2; diarrhœal diseases, 30; acute lung diseases, 6; consumption, 26.

The Foul Passaic.

The sewage continues to pour into the river without let or hindrance, and the only consolation that can be had is that cold weather is approaching to chill off some of the stench. Whenever a tugboat or steamer goes up or down the river and churns up the brothy mass, the odors become worse.

It is said that persons who are compelled to abide in the neighborhood are beginning to have the "River Face." This is the newest kind of face. The constant inhaling of foul smells and the continuous endeavor to exhale them have led to some frightful facial distortions. These have become chronic; hence the corrugated river face.

In Newark, in the streets nearest to the river, owners of property fear they will lose their tenants.

RHODE ISLAND.—*Typhoid Fever* in Newport is reported, October 16, on the wane; though there are at this time 59 cases under treatment, and to this date there have been 15 deaths. Dr. Swarts, of Providence, Secretary of the State Board of Health, has been

here, at the request of the medical board of the Newport Hospital, to examine the situation. At his suggestion the local health authorities will make a careful investigation of the sanitary surroundings and of the water and milk supply in the specially affected territory.

The "local health authorities" of Newport are a committee of the board of aldermen. It is to be hoped that some one—some public spirited physician, or other citizen—will make an estimate of the costs of this epidemic in lives lost and sickness expenses, in addition to the amount expended by the "health authorities," for the protection of the public health, as a means of awakening the citizens of Newport to a sense of their duty.

SANITATION IN GLASGOW.

The report of Chief Sanitary Inspector Peter Fyfe, F. R. S. E., for the year ending December 31, 1899—a folio pamphlet of forty pages—is an admirable exhibit of sanitary work, and all the more so for the recent outbreak of plague in the city in the face of conditions against which it could make no headway.

Population of the city, on the estimate of the Registrar-General, June, 1899, 733,903. The death rate for the year was 21.6 per 1,000 of the inhabitants. There was an increase in the number of nuisances reported and dealt with over the previous year—32,437 against 29,559—but a decrease of infectious diseases—17,833 against 18,957; of typhus fever, but 16 cases; typhoid fever, 1,090 against 1,212 for previous year; diphtheria, 465 cases—an increase of 32; scarlet fever, 4,728—1,108 increase. Measles was and continues to be the most prevalent of infectious diseases. "Without notification 8,964 cases were recorded," over a thousand more than in 1898. The death rate of measles alone ranges between 1 and 2 per 1,000 of population.

Investigations of the milk supply discovered some abominable conditions, accountable for much sickness.

Disinfection was extensively practised in various ways—"528,800 articles of clothing and bedding removed for washing and disinfection; 11,046 apartments were fumigated with sulphurous acid; 24,027 beds, pillows and other articles were treated by high-pressure steam and hot air in the disinfectors; 707 beds were burned in the furnaces, refilled with fresh material and sent home. Very few complaints were made of articles lost or destroyed."

Details follow with reference to special nuisances, work shops,

smoke prevention, artisans' houses, lodging houses, seamen's and emigrants' boarding houses, food and drugs, byres, dairies and milkshops, analyses, etc.; comprehending a great amount of sanitary work intelligently conducted, and with such success—invigorated by the advent—as to have proved to be an insuperable barrier against bubonic plague.

ENDEMIC CENTRES OF PLAGUE.

In China, in the Himalayas, in Mesopotamia, in Persia, in Arabia, and in Tripoli centres of plague have long been known to exist, and have always been regarded as possible sources of danger in the future, and recent inquiry has further brought to light the fact that similar foci of the disease have, at least for some years past, been more or less active in Siberia, in Mongolia, and in Central Africa. Plague has for a long period been endemic in Yunnan, the province in the extreme southwest corner of the Chinese empire, closely bordering on Burmah on the west, and extending northward toward the frontiers of Tibet. * * * A Chinese gentleman has quoted in the pages of "Nature" a passage in a Chinese work which he found in the library of the British Museum, and which he says "bears witness to the much earlier occurrence of the pest in Yunnan, insomuch as the author, who was born in 1736 and died in 1809, speaks of his contemporary dead thereby thus: 'Shi-Tan-Nan, the son of Shi Tan, now governor of Wang Kiang, was notorious for his poetic gift. * * * Then in Chan-Chan (in Yunnan) it happened that in the daytime strange rats appeared in the houses, and lying down on the ground perished with blood-spitting. There was not a man who escaped the instantaneous death after being infected with the miasma. Tan-Nan composed thereon a poem entitled "Death of Rats"—the masterpiece of his; and a few days after he himself died of this queer rat epidemic.'" The close association of this peculiar behavior of rats with the prevalence of plague in man observed in the same province in recent years makes it almost certain that the disease here referred to was plague, although no symptoms are mentioned by which it can be finally identified.—"Journal of Tropical Medicine."

CONCENTRATING CONSUMPTIVES.

Probably on the largest scale ever undertaken for colonizing consumptives is that of the U. S. Marine Hospital Service on the

Fort Stanton Reservation, N. M., 150 miles south of Santa Fé. The Ancient Order of United Workmen made application to the Government for permission to erect a sanitarium for consumptive members on the reservation, and the Woodmen, Odd Fellows, and other secret orders followed rapidly. A plan to allot each State desiring it sufficient ground for a sanitarium is being seriously considered, owing to the prevalence of tuberculosis in portions of the East.

SPREAD OF LEPROSY IN GERMANY.

Germany is getting nervous over the spread of leprosy in the empire. The Imperial Board of Health has recently reported that there were twenty-two known cases of leprosy in Prussia last year. There were also six cases which are suspected and are still under observation, and probably some which have not been reported. In the Memel district of Prussia the disease is indigenous. The Prussian Ministry for Religious and Medical Affairs is to make a systematic search for undiscovered cases.

NATIONAL BERTILLON SYSTEM.

ALBANY, N. Y., September 26, 1900.—Through a recent arrangement made at Cleveland, Ohio, between Superintendent of Prisons Collins and the representatives of nearly all penal institutions in the United States that use the Bertillon system of identification, the State Central Bureau of Identification here will be used as the central bureau for all these institutions.

The full benefits of the system have never been realized, as each State has worked by itself, and there has been no unity of operation. By the arrangement now made duplicates of all descriptive cards prepared in the institutions of the different States will be filed at the State Bureau, at Albany, thus affording a system of criminal supervision national in its scope, and which it is believed will render as important service in the United States as the great bureau at Paris has in France.

DECREASING BIRTH-RATE IN EUROPE.

Recent statistics demonstrate the fact that in all the countries of Europe, with the exception of Russia, the percentage of increase by births has been diminishing since 1891, the average decline being three per cent. The greatest difference is shown by England, where births have receded from 34 per cent. to 29.1 per cent., and the smallest by Norway, namely, 0.1 per cent. From 1871 to

1875, the increase by birth in Germany was 39.9 per cent., but in 1891-95 this had sunk to 36.3 per cent., and in the year 1897 it went down to 36 per cent. The general average from 1881 to 1885 was 36.8 per cent., but is now 36 per cent. More noteworthy is the decrease in Austria, where in the course of twenty-five years it has dropped from 39.5 per cent. to 37.4. In Belgium, the percentage in 1871 was still 32.1, but in 1897 only 29; and in France the shrinkage in the same period was from 25.5 to 22.4. Next to Norway, the most favorable data are reported from Switzerland.

PRIZE TO DR. BARUCH.

The Paris Exposition, 1900, has awarded to Dr. Simon Baruch, of New York, a silver medal and diploma, in recognition of his efforts for the establishment of cleansing baths.

THE MEDICAL MIRROR'S PRIZE ESSAYS—CHANGE OF DATE.

At the request of many prospective contestants it has been decided to change the date of closure of the Prize Contest to November 15th, at least. This does not mean that the final date for receiving essays has been changed, for it still remains February 1, 1901, the prizes to be distributed by the committee on awards on March 1, 1901.—*Medical Mirror,* St. Louis, October 11, 1900.

Dr. John B. Murphy has accepted a Professorship in Surgery and Clinical Surgery in the Northwestern University Medical School—Chicago Medical College. He is surgeon-in-chief of Mercy Hospital, with the direction of the surgical teaching in that hospital, where he will give two clinics each week. The hospital now contains 260 beds, with abundance of clinical material.

Dr. Archibald Church has been recently appointed Professor of Nervous and Mental Diseases, in Northwestern University Medical School—Chicago Medical College—and head of the Neurological Department.

BOOK REVIEWS.

Medical Directory of New York, New Jersey and Connecticut. Published by the New York State Medical Association, Vol. II., 1900.

This admirably gotten up 12mo volume of nine hundred pages, comprehends much more than its title indicates. Besides giving information concerning the special lines of work in which all the physicians of the several States represented are interested, it is

alike pertinent to Dentists and Pharmacists, with details of residence, facilities of communication, etc.; hospitals, dispensaries, colleges, benevolent institutions, societies, nurses, and many advertisements of practical utility; a ready reference book for all. Printed by the Trow Directory, Printing and Bookbinding Co., New York, it lacks other reference for supply.

TRAVELS IN TARTARY, THIBET AND CHINA, OF MM. HUC AND GABET. New edition, from the French, two vols., 100 illustrations, 688 pages, cloth, $2.00 (10s.). Handsomely bound in Oriental Style. Popular edition. One vol. $1.25. The Open Court Publishing Co., Chicago, Ill.

This is a particularly timely publication, containing information gained at a period wholly unconnected with the stirring events and commotions during the half century since it was written. Nevertheless, with regard to local conditions and customs—from all that has been learned during the time that has intervened—it is as applicable to the present time as it was when first written; for fifty years in China's progress is marked by the progress of time only—manners and customs are the same and the country almost. The perils and difficulties of travel at that time are vividly depicted, and that they are not much better now is suggested by the recent act of the government officials in resorting to some inaccessible place to the united powers. But as said by *The Academy* in its review: "Fools, it is known, dash in where angels fear to tread, and there are also instances of missionaries dashing in where intrepid and experienced travellers fail. Such was the case with MM. Huc and Gabet, the two mild and modest French priests who, fifty years ago, without fuss, steadily made their untortured way from China across Thibet and entered L'hassa with the message of Christianity on their lips. It is true that they were not allowed to stay there so long as they had hoped; but they were in the Forbidden Land and the Sacred City for a sufficient time to gather enough facts to make an interesting and very valuable book, which on its appearance in the forties (both in France and England) fascinated our fathers much in the way that the writings of Nansen and Stanley have fascinated us. To all readers of Mr. Landor's new book who wish to supplement the information concerning the Forbidden Land there given, we can recommend the work of M. Huc. Time cannot mar the interest of his and M. Gabet's daring and successful enterprise." With this THE SANITARIAN agrees and heartily commends the enterprise of the publishers for this production.

CONTEMPORARY LITERATURE.

BRYAN OR M'KINLEY.

The *Symposium* in the October number of the "North American Review," expresses the determination to treat the commanding interests of the hour with a fulness, distinction and authority which, in the treatment of such topics, have never been attained by any other magazine in the world. No less than eleven articles are given to the discussion of the great political questions upon which the minds of Americans are concentrated at this moment—the issues involved in the Presidential campaign; and most of the writers of these articles are men who are foremost in the councils of the Democratic and Republican parties. Mr. Bryan's advocates are Adlai E. Stevenson, Democratic candidate for the Vice-Presidency; Senator B. R. Tillman, Mr. Edward M. Shepard, Mr. Richard Croker, and Mr. Erving Winslow, Secretary of the New England Anti-Imperialist League; while those who favor the election of Mr. McKinley are Postmaster-General C. E. Smith, Senators G. F. Hoar, T. C. Platt, and W. M. Stewart, Mr. Andrew Carnegie and Mr. James H. Eckels, Comptroller of the Currency in Mr. Cleveland's second administration. The symposium thus presents the most diverse views of the citizen's duty in the election: those of the "regular" Democrat and Republican; those of the Southern Democrat; those of the Democrat who opposed Mr. Bryan in 1896 and who will support him now; those of the Democrat who supported General Palmer in 1896, but who will support Mr. McKinley now; those of the Silver Republicans who voted for Mr. Bryan in 1896, but who will now vote the Republican ticket; those of the Republican who oppose the Philippine policy of the Administration, but who apprehend even greater disasters from the success of the Democratic party, and those who oppose the Republican party on the single ground of its alleged Imperialism. Altogether, this symposium is a summary of the political questions which now agitate the public mind, as expressed by the opposing parties, upon which the contention is based: knowledge necessary to every voter who would vote intelligently.

THE UNITED STATES AND CUBA.

It is well known that the United States Government, in ordering the election last month of a Cuban constitutional convention,

entertained the lively hope that this body would see the propriety of arranging for extremely intimate relations between Cuba and the United States—relations which, while leaving ordinary affairs of internal government wholly to the Cubans, would place external affairs under the ægis of the United States. We must, in all sincerity, agree with Senator Beveridge that it would be very unfortunate for Cuba to have our American school administration withdrawn at this time; while it is our further conviction that we owe it to ourselves to retain a permanent supervision of Cuban sanitary affairs, with a view to protecting our Southern States against yellow fever and cholera. Cuba needs five years more of the present *régime* under General Wood, after which it ought to have perhaps ten years of territorial government like that of Oklahoma or New Mexico; and then it ought to be admitted as a sovereign State into the Union. But Mr. McKinley is in no way responsible for the absurd and mischievous pledge made by Congress on the eve of our going to war, to the effect that we were not going to annex Cuba. It is as ridiculous to think that we are really doing a good thing for people who live in Cuba by ordering them to adopt a constitution and run an independent government as to think it an act of generosity to shove a handful of men, women, and children off to shift for themselves, in a small open boat in mid-ocean, when they might just as well have been comfortable and safe on board a big steamer. Undoubtedly, there are many intelligent Cubans who think it best that the island should have its independence first, and should then seek annexation on its own free motion. Under all the circumstances, there is much to be said in favor of this view. There is just now great irritation in Cuba over that part of the War Department's call for the convention which makes it the convention's duty "to provide for and agree with the Government of the United States upon the relations to exist between that Government and the Government of Cuba." The Cuban leaders took great interest in the election of the delegates, but probably not more than half of the registered voters attended the polls. The convention will include some of the ablest men in Cuba, and its sessions will begin at Havana on Monday, November 5, the day before our Presidential election.—From "The Progress of the World," in the *American Monthly Review of Reviews* for October.

A LETTER ABOUT CHINA.

To the young readers of *St. Nicholas,* R. van Bergen addresses

a letter in the October number, explaining the present situation in China.

The Empress of the West had a son six years old at the time of his father's death in 1861. This child was placed upon the throne as the Emperor Tung Chih (pronounced Toong Chee), which means United Rule, because the two empresses had agreed to be his guardians—that is, to take care of him and rule the country for him so long as he remained a child. The widow of an emperor is called a dowager-empress, and so the dowagers began to rule the country.

You can easily understand that these two ladies were just as superstitious as the Chinamen. They believed that the air-and-water spirit was angry because the Emperor had gone to Yeh-ho; and when there came a flood, and famine, and a dreadful disease, they believed it all the more. But Tung Chih grew up, until he was sixteen years old, when it was thought time that he should marry. A wife was selected for him by his two guardians. Tung Chih had been a bad boy, and would probably have grown into a bad man; but two years after his marriage (in 1874) he caught the smallpox and died.

Once again the throne was vacant, and the two dowagers selected the three-and-a-half-year-old son, Tsai-tien (pronounced Tsie-teen), of Prince Chung to succeed Tung Chih. The child's name was changed into Kuang Hsu (pronounced Kwang Soo, breathing upon the *s* of Soo), which means "Illustrious Successor." The two dowagers were once more to be guardians of the child, and again directed the government of China.

All this made the two dowagers dreadfully afraid of the fung-shui, and this fear has increased until at present the surviving Empress of the East is in terror of her own shadow. The other Dowager is dead. In the meanwhile, Kuang Hsu grew up, and in due time was proclaimed Emperor. He trusted all the business with foreigners to the wise old viceroy named Li Hung Chang (pronounced Lee Hoong Chang) until the war with Japan broke out in 1894.

Japan, at that time, had a population equal to about one-tenth of that of China. But the Japanese love fighting, they had their soldiers drilled for many years, first by French and then by German officers, and therefore had a fine army, whereas China had no soldiers at all. Of course, the Japanese won. When China asked for peace, it had to pay Japan many millions of dollars and give it the Island of Formosa, in the China Sea, almost opposite Hong-

kong. Japan also wanted land in China, and that country could not say no. But then Russia, France, and Germany told Japan that she must not take land on the continent of Asia. The Japanese were very angry, but did not wish to fight three big nations at once. They gave way, but promised themselves to have it out with Russia at some other time. They were made more angry still when they heard later that Russia herself had taken the same land which Japan had demanded from China.

Poor Kuang Hsu could not understand how it was that the Great Middle Kingdom, as the Chinese called their country, could be defeated by a small nation of men whom he called *wo jen,* or pigmies. Then somebody whispered into his ears that the Japanese had railroads and all the new inventions of our time. "Very well," said Kuang Hsu; "then we must have them too." "But," said this voice, "the Japanese have learned everything that the barbarians can teach." "Well," replied the Emperor, "then we must learn that too." So the Emperor made laws ordering the Chinese to establish schools, and to have their children learn the same studies which you are learning now. He gave orders also to commence the building of railroads.

This alarmed the people, and especially the old Empress Dowager. The first law which all Chinese must obey is, Honor thy father and thy mother; and although he was not really her son, she had adopted him. So when the Empress commanded poor Kuang Hsu not to make any more laws, but let her do it, the poor man could not refuse. It was this fung-shui superstition again! The Empress ordered that no one must obey Kuang Hsu's laws, and did all she could to stop the building of railroads.

She was told by the ambassador of Russia that she was right. Why? Because Russia wanted to take all China for itself, and if the Chinese made progress as the Japanese had done, China would be strong enough to defend itself. Japan advised the old Empress that she must do as Kuang Hsu had done. At last the Empress became so angry that she ordered the people to buy arms and to drive the foreigners out of China. Now the whole world is sending men-of-war and soldiers to China, and, after the Chinese have been defeated, Russia and Japan may, perhaps, wage war with each other to see who shall take the most of that country. The United States has also sent soldiers to China. There are many of our citizens in China, and our government must take care of them when the Chinese attack them.

THE SANITARIAN.

DECEMBER, 1900.

NUMBER 373.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

TWENTY-EIGHTH ANNUAL MEETING.
Held at Indianapolis, Ind., October 22-26, 1900.

ABSTRACT OF PROCEEDINGS.

The sessions were held in the Auditorium of the German House. Dr. PETER H. BRYCE, of Toronto, Secretary of the Provincial Board of Health of Ontario, President, in the chair.

Governor James A. Mount welcomed the Association on behalf of the State. He said, in part:

"It affords me pleasure to greet and to welcome to Indiana the American Public Health Association. The warmth of the welcome to an association finds its inspiration in the good deeds of that body. Measured by such standard, this convention will find in the hearts of the people of this city and this Commonwealth a most cordial welcome. No science has made greater progress than sanitary science; no profession greater achievements than the medical profession; no field of investigation and study offers broader opportunities than that which prevents contagion, improves health conditions and heals the sick. Indiana has not been unmindful of these important conditions. At the disposal of the executive, through and with the advice of the State Board of Health, $50,000 is provided as an epidemic fund. Laws restricting the practice of medicine and providing who shall act as pharmacists have been enacted as safeguards to the life and health of the people. Carlyle said: 'There is no kind of achievement equal to perfect health. What to it are nuggets and millions?' Sir William Temple well said: 'Health is the soul that animates all the enjoyments of life, which fade and are tasteless, if not dead, without it.' Without health a man starves at the best and greatest

tables, poor and wretched in the midst of the greatest treasures and fortunes.

> 'Reason's whole pleasure, all the joys of sense,
> Lie in these words, health, peace and competence.'

"Truly, 'All that a man hath will he give for his life.'

"However much we may differ as to the paramount issue in the political arena, surely we are agreed that in the great drama of life, in all temporal affairs, health is of transcendent importance.

"The growing population of our cities, the contamination of our lakes and rivers through the waste and sewage of our cities and towns, will call forth the wisest provisions of law to maintain good sanitary conditions. A multitude of questions involving hygienic problems are daily coming to the front for solution. In these questions we are all deeply concerned. We rejoice in the work of the American Public Health Association. Your discussion of things vital to public health must result in better methods of combating and preventing infectious or contagious diseases. We look upon your work with favor, and in full appreciation cordially greet you. Your souvenir badges will remind you that in the capital city of our great State stands a silent monitor—massive, grand and eloquent in its silence. It speaks for our sleeping brave. The State that honors her patriot dead will always have heroes to fight the country's battles.

"Coming, as you have, from all parts of the United States, of Canada and Mexico, to this beautiful inland city, you must have observed its accessibility. Now that you are here, we hope you will be charmed with its happy homes, its churches and schools, and, more than all, by the hospitality, intelligence and kindly spirit of our people. Here in this city, and in this State, you will find a cosmopolitan spirit that will make you feel at one with our people. The deliberations of your convention will doubtless diffuse information upon the important question of public health. I trust you will also carry with you many pleasant recollections of this State, its resources, its growth, its possibilities. It will be pleasing, indeed, to have you visit our schools, normals, colleges and universities; our penal, reformatory and charitable institutions; our great industries and our fertile farms. We are proud of all these; but our boast is not of wealth and products great, but men and women of high estate. The longer you sojourn in our midst

and mingle with our people, the better will you understand why this city is a Mecca to which journey conventions; that they may feel the inspiring touch of warm-hearted cordiality and genuine progress.

"Trusting God's blessing will be upon you and the loved ones from whom you are absent, and that your convention will be harmonious and profitable, I now in behalf of all our people, bid you a most cordial welcome."

On behalf of the city, Deputy City Attorney BELL apologized for the absence of Mayor Taggart, and welcomed the visitors. At the conclusion of his address, the Association proceeded to business.

Many new members were admitted. The first paper read was on the "Importance of Hygienic Principles," by Dr. J. BRENA, of Zacatecas, Mexico. It dwelt in particular upon the insidiousness of tuberculosis, and concluded as follows: "We, sons of Mexico, who but yesterday had no other spur but the feverish impulses of insurrection, dominated to-day by very different sentiments, come to this luminous focus of irresistible attraction. We have no pretensions to increase the volume of science by our poor contingent. We come, to the contrary, to study the advances both of the Canadian school of medicine, the offspring of the old English school, the school of Harvey, of the English Hippocrates, of Graves, the immortal Graves, of Sir Thomas Watson, of Walsh, Corrigan, Murchison, Syme, Stokes, Clark and others abroad; and of the young American school, which, initiated by Morgan, the pupil of Hunter and of Cullen, prides itself justly on the glories of Valentine Mott, MacDowell, Pepper, Agnew, Horace Wells, and others.

"If in this brief stay we should succeed in acquiring one of those particles in which the treasure of truth was divided when it descended on mortals from Olympus, we shall be as pleased and satisfied as if we were the only possessors of the enchanting image, and we shall depart hence sure of receiving on the other side of the River Brazos the blessings of our native country, for there also they agree with Leibnitz that 'there are only two things which ought principally to occupy us here below—virtue and health.'"

RAILROAD SANITATION.

Dr. J. N. HURTY, of Indianapolis, read the report of the Special Committee on "Car Sanitation," by Prof. S. H. WOODBRIDGE, of the

School of Technology, Boston, Chairman of the Committee. The report showed that, while in some cases the railroad management of great trunk lines are not indifferent to the health and comfort of their patrons, at least half of the railroads of the country did not reply to the letter of the Committee asking information as to what precautions are being taken to guard their patrons from disease. The report quoted a letter from the president of one of the great trunk lines that was extremely evasive, and in which the answers to the questions propounded were not given because the writer did not know whether the Association wanted to urge legislation to force the road to make improvements or whether it was wanted for purely scientific use. He said that the roads could not be expected to do more for the public than the public did for itself. The report made the following suggestions as to preventing the spread of contagious and infectious disease through railroad cars: Persons infected should be isolated; fluted and carved woodwork should be replaced with plain and hard furnishings; persons ascertained to be ill with contagious disease should be isolated in a compartment appropriately equipped and ventilated in such a manner as to separate it from the rest of the car. Through trains should be provided with rooms for the sick as well as state-rooms, interchangeable in use. The interior of passenger cars should be plain, finished with hard, smooth and polished surfaces. All furnishings should be as non-absorbent as possible. Coaches should be furnished with effective means for continuously supplying not less than 1,000 cubic feet of warm air an hour for each single seat and for distributing and removing the air without troublesome draught. The temperature should be regulated. The cleaning of cars should be frequent and thorough. Floors and sanitary and laboratory fixtures should be frequently treated with a disinfecting wash. All fabrics in cars should receive sterilizing treatment. All bed and lavatory linen should be thoroughly sterilized in the process of laundering. Sewage tanks and earth closets should be provided under the cars. The practice of disposing of excreta by scattering it over road-beds is dangerous. Water and ice should be obtained from the purest available sources. The use of tongs in handling ice should be insisted on. The water tank should be frequently cleansed and periodically sterilized with boiling water or otherwise. The public should be educated to use individual cups. Paper paraffined cups might be provided by a cent-in-the-slot device. The

use of canned goods in buffet car service makes careful inspection of such goods imperative. Fruits and all eatables before and after purchase should be stored with care to avoid all unnecessary exposure to street and car dust. The filthy habit of spitting on car floors should be dealt with in a manner to cause its prompt discontinuance. It should be punished as one of the most flagrant of the thoughtless offenses against the public right to health. Station premises should receive attention directed to general cleanliness of floors, furnishings, air, sanitaries, lavatories, platforms and approaches, and should be plentifully supplied with approved disinfecting material. The recommendations of the committee were concurred in by the Association.

DR. J. N. HURTY said that if the Association would make a vigorous demand for white blankets for sleeping cars, inctead of colored ones, it would be a great reform. The white blanket would tell its own story. Colored blankets are frequently saturated with filth.

DR. H. M. BRACKEN, Minneapolis, said that inasmuch as the traveling public pay a good price for Pullman cars, it is only right that the cars should be kept clean and in good condition. The beds are made up, people sliip in them, the next morning the linen is removed, while the mattresses and blankets are thrown into the upper berths and remain there until the next night, then used again. It is not uncommon for people, on entering Pullman cars, to complain of the odor of stale bedding, etc.

DR. C. H. JONES, Baltimore, referred to tuberculous patients who travel long distances. When the greatest care and caution are observed, the blankets used on Pullman cars are now and then spat on by them. The attendants can not always be with such patients to cover their mouths with handkerchiefs. Railway managers should be notified of the great danger to the public from this source. When the public is educated in this matter a great reform will have been inaugurated.

DR. C. P. WILKINSON, New Orleans, stated that the chief objection to the equipment and furnishings of railway cars is that they are upholstered in absorbing material. In the extreme South, rattan and steel springs are now used instead of plush and woolen furnishings.

DR. U. O. B. WINGATE, Mliwaukee, referred to the work that is being done in this direction by the International Association of Railway Surgeons, and suggested that it might be well to appoint

a committee to co-operate with a similar committee of that Association to do further work in car sanitation.

DR. HURTY spoke of one railroad which is now constructing seven cars, with perfectly plain interiors. The bottoms and backs of the seats can be taken out and thoroughly sterilized at the end of every run.

DR. DOMINGO ORVANANOS, of the City of Mexico, read a supplementary report on car sanitation. Boards of health in the territories covered by the Association ought to try to obtain support from the different legislatures so as to make certain provisions obligatory on railway companies, as, for instance, the isolation in special cars of any persons suffering from transmissible diseases; to supply guaranteed filters in the tanks of drinking-water; the disinfection of bed-clothes, hangings, curtains, and towels; all sleeping-cars should be provided with small disinfectant stoves for small toilet articles; the absolute prohibition, under severe penalty, of expectoration on pavements; all railroad cars should be provided with a sufficient number of cuspidors containing a strong disinfecting solution.

PORT QUARANTINE.

DR. ALVAH H. DOTY, Health Officer of the Port of New York, contributed a paper on "New Quarantine Methods and Changes which are Called for in Marine Sanitation," which, in the absence of Doty, was read by Dr. H. B. Horlbeck, of Charleston, S. C. (from *Medical Record* report), in full, as follows:

For some years past the conviction has been forced upon me that a careful review of the subject of public health, particularly that part of it which relates to marine sanitation, will show that many of the methods now employed in carrying out this important work are not in harmony with the facts which have been presented by scientific investigation and practical experience, and I believe the time has come when this matter should receive the most serious consideration. The term "commerce destroyer," which has been applied to coast quarantine, has not been used without some justification, inasmuch as such rigorous and unreasonable regulations have been imposed in different sections of the world that commercial intercourse with those sections has been almost abandoned. In the past, excuse may have existed for the enforcement of these measures, as but little was known concerning the cause of infectious disease, the germicidal value of agents known as

disinfectants, etc. However, the brilliant researches of Pasteur and of Koch twenty years ago, and the subsequent investigations of other savants, have given to the world indisputable evidence of the germ origin of many of the infectious diseases and have stimulated bacteriological inquiry in all directions. As a result, regarding this subject, we are now in possession of definite scientific knowledge which is in harmony with our practical experience. Therefore but little reason exists for the continuation of some of the methods at present employed in sanitation. If we profess a sanitary science we must abide by its teachings. In other words, we must have the courage of our convictions, no matter to what extent they may conflict with theory. Unfortunately the latter plays a prominent part in many of the quarantine regulations now in force, and while it adds nothing toward protecting the public health, it seriously injures commerce.

Contrary to the popular belief, the most careful investigation both from a scientific and a practical standpoint has demonstrated that the clothing actually worn by well persons is not a medium of infection. This is also true of ships' cargoes. In making this statement, I do not mean to imply that it is not within the bounds of possibility for exceptions to present themselves, but such instances are rare and should not be given undue weight in the consideration of this matter; exceptions confront us many times in public health work. For instance, it is generally accepted throughout the world that the maximum period of incubation of small-pox is fourteen days, and it is for this period that persons who have been in contact with the disease are kept under observation by the health officials. Reliable evidence, however, has occasionally been presented which tends to show that the appearance of small-pox may be delayed until the fifteenth or sixteenth day after exposure. Again, we accept five days as the maximum period of incubation of yellow fever, although instances are cited in which the disease has occurred after an incubation of six or seven days; still we are not justified in making rules and regulations to conform to these exceptions. In discussing this subject some time ago with a very distinguished health official, he emphatically indorsed the statement which I have just made regarding the clothing worn by well persons, and said that in his official experience covering a period of thirty-five years, he remembered but one case in which the clothing worn by a well person could have been regarded as the medium of infection. After an active experience of twenty

years, I can bring to my mind but one instance of this kind. This occurred during the epidemic of typhus fever in 1893. I was not surprised, however, to find out subsequently that the man who had succumbed to the disease had been in direct contact with persons who at the time were suffering from typhus. During the different epidemics of small-pox, typhus fever, etc., which have occurred in New York, the physicians, ambulance drivers, and helpers connected with the health department have been in close contact with the patients; the ambulance drivers being frequently obliged to carry the sick in their arms. Nevertheless no evidence that I am aware of, after a careful investigation, has ever been presented to show that infection was carried either to the homes of these officials or to their associates. Cases of small-pox, typhus fever, etc., are frequently found which have passed through the various stages of these diseases before detection. In many instances, the relatives of these patients, living in the same apartments with them, who by successful vaccination or otherwise have become immune, are employed in factories where they are in close contact with others, yet without transmitting the disease. The busy medical practitioner may during the day visit many cases of infectious disease and may go from them to others without previously changing his clothing or performing disinfection. He has reason to believe that he does not act as a medium of infection; he sees no evidence of it in his own home, nor is evidence presented to him that he transmits disease to his patients. If under the circumstances which I have just cited the clothing worn by well persons does not act as a medium of infection, it is hardly reasonable to believe that danger exists in the clothing worn by those who are in good health and have been for a number of days or weeks removed from an infected port or other exposure. Bacteriological research goes far to confirm the results of practical experience to which I have just referred, inasmuch as it has shown that pathogenic organisms can continue their existence for only a few hours when exposed in the presence of sunlight and air. As a matter of fact, many careful observers believe that the activity, at least of some, of the specific organisms is inhibited by an exposure of only a few minutes to air and sunlight, and that their activity and power of propagation are not renewed unless brought in contact with proper media. It is upon such evidence that we must base our conclusions in deciding what methods shall be employed to protect the public health.

As I have already stated, exceptions may exist, and occasionally evidence is presented to us from a reliable source which tends to show that disease is contracted through the medium of the clothing of well persons. It is reasonable to believe that when a person is in close and prolonged contact with a case of scarlet fever or small-pox, for instance, then puts on an outside wrap and removes it after going directly to another apartment but a short distance away, he may transmit infection. However, careful investigation, with the most reliable evidence, shows that this occurs only in rare instances. In connection with municipal sanitation the possibility that such instances may occur should receive proper consideration, and reasonable efforts be made to prevent their occurrence, whereas in marine sanitation this possibility need receive consideration only when infectious diseases actually exist on the arrival of the vessel in port. It is not proper nor does it aid in the advancement of sanitary science to overlook facts. The importance of a clear understanding of this matter, particularly in relation to marine sanitation, cannot be overestimated; it means, as a rule, that we can safely dispense with the disinfection of clothing actually worn by well persons arriving on vessels from infected ports; this not only lessens the detention of ships, but diminishes the expense to commerce. In municipal sanitary work this knowledge is valuable, as we are then reasonably assured that the disease will not spread—at least to any serious extent—through the medium of clothing worn by well persons; moreover, it teaches us to make a more thorough inspection in order to ascertain the origin of an outbreak of infectious disease. Such an inspection will frequently bring to light mild, ambulant, or convalescent cases which otherwise would not be found.

When we have given to the patient his clothing and effects, an apartment, and the required attention, and have surrounded the case with every possible sanitary precaution, and when at its termination we have performed careful and thorough disinfection, we have, I believe, given to the public the full protection which is dictated by practical science.

We have equally satisfactory evidence that a ship's cargo does not act as a medium of infection; if exceptions exist they have not been brought to my attention.

The outbreaks of bubonic plague in European and other ports with which the United States is in frequent and constant communication have brought prominently to our notice the question of

the transmission of this disease by rats and other vermin. Our information on this subject is at present by no means complete; although Kitasato and Yersin demonstrated the presence of the disease in rats during the epidemic of bubonic plague in Hong Kong in 1894, we have beyond this but little authentic information on the subject. It is, however, reasonable to believe that in such communities as are found in India and China, where filth, overcrowding, and bad sanitary regulations exist to an extent which is almost beyond belief, the dissemination of infection is so general that even vermin are involved. However, in civilized communities where the ordinary sanitary regulations are carried out, the danger from this source would seem to be very limited. What may be a satisfactory summing up of this detail of the subject from a theoretical standpoint, although entitled to respectful consideration, should not overshadow the practical experience in this direction. So far as I am able to ascertain, no authentic report exists which shows that cargoes of vessels have transmitted bubonic plague through the medium of infected rats or other sources. Since 1870 this disease has been particularly active in India and China and other Eastern countries, where it has visited many important seaports. During this time both sailing-vessels and steamers have been plying between the ports referred to and the United States, carrying cargoes which come directly from the plague-infected districts, and which include raisins, rugs, silks, and other general merchandise. No quarantine restrictions whatever have been placed upon these cargoes, and in no instance has the disease been conveyed to this country. It would seem that a test of thirty years ought to be regarded as satisfactory evidence that bubonic plague is not likely to be transmitted in this manner, either by the cargoes or by the transportation of infected vermin. During the recent outbreak of the plague in Rio Janeiro and Santos, many vessels carrying coffee from these ports arrived at the New York Quarantine Station, probably two during each week, and for two months or more the cargoes were removed in open stream and transferred to the city on lighters, an opportunity thus being given to collect such rats, dead or alive, as could be found on board. These were removed to the laboratory and examined bacteriologically, and in no instance was there the slightest evidence of bubonic-plague infection. During the past six years about thirty-five thousand vessels from different parts of the world have entered the port of New York, and while, save in

seven or eight instances, their cargoes have in no way been disturbed, yet not the slightest evidence has been presented that this material has in any way transmitted any form of infectious disease. I may add to this the fact that the most careful investigation has failed to present satisfactory evidence that either foreign or domestic rags act as a medium of infection, although they include all kinds of wearing apparel which is frequently filthy and offensive. From what source, then, do we receive information which is supposed to give proof that the clothing worn by well persons or the cargoes of vessels act as a medium of infection? I believe it to be principally from vague reports, which have been handed down to us from almost ancient times. These reports, so far as my investigations are concerned, carry with them no scientific or practical proof, and are mainly hearsay evidence. For instance, an outbreak of infectious disease, the origin of which is unknown, appears at a small seacoast town. It is learned that a ship had previously arrived from an infected port, discharged its cargo, and departed; this appears to be a satisfactory explanation and it is decided that the disease was probably introduced by the cargo; but little or no attention is paid to the fact that on the arrival of the vessel the passengers and crew were not subjected to an examination, and that nothing is known of the possible existence of a mild case of infectious disease which may have remained in town or departed with the vessel. The license which theorists assume in dealing with this matter is apparently without any limit. Some time ago a foreign health official very gravely asserted that an outbreak of bubonic plague was caused by the transmission of infection through the medium of some neckties. Other statements are made regarding the origin of outbreaks of infectious disease which are equally ridiculous. No fair evidence is presented to substantiate such theories, which go far toward making public sanitation a farce. I believe that the future will show that if a vessel arrives in port and there are no cases of sickness present on arrival and none have occurred in transit, the vessel and its cargo will in no way act as a menace to the public health. From my own experience I am satisfied that this is true, and I believe that an outbreak of infectious disease when the cause is unknown is almost always due to the presence of mild, ambulant, or convalescent cases which have passed unrecognized. These constitute a great danger to a community inasmuch as there is no protection against them. Cases of small-pox occur in which

the patient is apparently well and the eruption is with difficulty recognized. The frequent existence of mild cases of diphtheria is known to all physicians; mild or walking cases of typhoid fever which are mistaken for malaria, colds, etc., are well-known causes of serious outbreaks of this disease. The frequency with which mild cases of yellow fever occur is notorious; a vessel which arrived at this station some time ago from a port infected with this disease brought a large number of passengers, many of whom were not immunes; these were removed to Hoffman Island for observation and to complete the period of incubation; at the final examination all reported well, and from a visual inspection apparently were so. However, when the thermometers were used, four of the passengers were found to have elevated temperatures and were detained; of these, three were subsequently found to have yellow fever, one case being so mild that the patient could with little exertion have attended to his duties had he been allowed to proceed to his home. At least he could have kept up and around without arousing suspicion as to his condition. Cases of bubonic plague frequently assume a very mild form; of the four cases of this disease which occurred on the steamship James W. Taylor, arriving at this port from Santos,, Brazil, on November 18, 1899, one was fatal and the body was buried at sea. On the arrival of the vessel at quarantine the facts connected with the death of the steward were reported. The remainder of the crew were assembled on deck, reported well, and, from external appearance, were so. Inasmuch as the vessel came from a plague-infected port and as the symptoms associated with the steward's death were suspicious, the crew were made to remove their clothing and were subjected to a careful inspection, including a glandular examination. At this inspection the characteristic local lesion and the glandular affection were found in three of the crew, and the diagnosis of bubonic plague was then made and afterward confirmed by bacteriological examination. The captain of the ship, who was one of the three members of the crew removed to Swinburne Island Hospital, stated that he felt bad only for a day or so while in transit, and was surprised when informed of the serious nature of the disease. It is possible for such a person arriving on a vessel from a port issuing a clean bill of health or believed to be free from quarantinable disease, to pass an ordinary inspection, then proceed to some interior town, there to act as a medium of infection without being recognized as such.

I believe the lessons which we are to learn from the facts which I have presented are that mild or ambulant cases of infectious disease and convalescents from these diseases constitute a serious menace to the public health and are chiefly responsible for outbreaks which from time to time occur, and which cannot be accounted for; and that neither scientific investigation nor practical experience justifies us in assuming that either the clothing worn by well persons or a ship's cargo acts as a medium of infection except in such rare instances as I have referred to. The views which I have thus expressed as the result of my scientific investigation and practical experience are in harmony with the policy which I pursue in the treatment of vessels arriving at the port of New York. I believe this to represent scientific sanitation; and while it offers the full protection which we can give to the public, it also relieves commerce of unnecessary delay and expense, a most important consideration.

In the inspection of persons coming from infected ports, it is evident that the ordinary examination, which includes statements from the persons concerned, is not sufficient at all times to detect mild or ambulant cases. It appears to me that the most practical and important addition that we can make to the ordinary method of inspection is the use of the clinical thermometer. This has been in operation at this station for the past two years, and the most satisfactory results have been obtained in detecting mild or ambulant cases. Although I am firmly convinced that the maximum period of incubation of yellow fever is five days, there is no doubt that during the first day or so of the disease, persons affected may present themselves and pass an ordinary inspection. The use of the thermometer at this time, however, will almost always show an elevation of temperature sufficiently high to justify us in causing a longer detention. The statements of persons detained at quarantine cannot be depended upon, and at this station we accept them only as corroborative evidence. Persons from yellow-fever-infected ports, who are detained here to complete the period of incubation dating from the time of departure from the infected port, are never released until their temperatures have been taken. I have already cited one of the number of instances in which the disease has been detected in this manner. Passengers or crews coming from plague-infected ports are not released until their temperatures have been taken, no matter how long they may have been in transit. These are instances of the value

of the use of the thermometer at this station. It is frequently necessary to take the temperature of a thousand or more persons on the arrival of a vessel here. Therefore I have constantly on hand forty or fifty first-class properly registered instruments. If these are unreliable, or the exposure is insufficient, this procedure is worthless. What are known as half-minute thermometers are not practical, as they are extremely delicate and break easily. It is very important that those whose temperatures are being taken should be watched carefully, as they frequently take out the instrument, keep their mouths open, or otherwise interfere with the proper registration. A very interesting fact has been observed in connection with this portion of the examination. A temperature of 100° F. does not necessarily signify an abnormal condition, as our records show that this temperature is frequently present in well persons, and is probably due to some slight or transient cause, as it commonly disappears within a few hours. A large percentage of the temperatures range from 99° to 99¼° F. in persons in a normal condition. However, the rules of this department now require the detention of all whose temperatures reach 100° F. or over.

I cannot conclude this article without a reference to modern sanitary regulations, the value of which has been so forcibly presented to us during the past two years. Since 1895 or 1898, the civilized world has been made uneasy by reports from India relative to the terrible ravages of the bubonic plague in that country, and the possibility of its appearance at European and other seaports has caused much apprehension. During the past two years, the disease has appeared at Oporto, Lisbon, Alexandria, Santos, Rio Janeiro, San Francisco, and Glasgow, but in no instance has it proved to be a serious menace to the public health, the outbreaks having been rapidly brought under control, and in all but one of the above places the disease has disappeared. In Glasgow, a city which has an enviable reputation for cleanliness and good sanitary conditions, the duration of the outbreak was exceedingly short, although the disease existed some time before it was recognized. Than the above no more conclusive evidence has ever been presented to show the absolute certainty with which outbreaks of infectious disease can be controlled when good sanitary conditions, thorough inspection and observation, and cleanliness are maintained.

PROF. F. C. ROBINSON, of Maine, said that formerly a great

deal of paper was made from rags, and he was surprised to hear that there was no danger from infectious diseases from cargoes of rags. He believed outbreaks of smallpox and other contagious diseases had been traced to rags.

DR. H. M. BRACKEN vigorously controverted the statement of the essayist that healthy persons were not liable to carry disease in their clothing. Every physician of experience could cite instances of physicians who had carried contagion to healthy people.

The paper was further discussed by Drs. Wilson, Montizambert, the President, Lee, Durgin, and Jones, most of whom protested against the idea that physicians could not carry infection in their clothing.

DR. A. WALTER SUITER, of Herkimer, N. Y., read the "Report of the Committee on Cause and Prevention of Infectious Diseases." Reference was made to smallpox, which he sad was on the increase, and he cited copious statistics to prove his assertion. He added the pleasing assurance that the death rate from this malady was decreasing. The latter fact must not be viewed too optimistically, because smallpox was certain, if an epidemic of it continued long enough, to develop its greatest degree of virulence. He showed the value of sanitary precautions and of vaccination by citing the fact that Porto Rico, since the United States had dominated its government, had rid itself of the disease, which before the war was very prevalent in that island. He also discussed malaria, scarlet fever, and typhoid fever, and declared himself a believer in the theory that the germs of malaria were transmitted by mosquitoes in many instances. In discussing typhoid fever he referred to the declaration of Dr. Vaughan, that more than eighty per cent. of deaths among American soldiers in the Spanish war were caused by typhoid fever, and emphasized the necessity of cleanliness about military camps. He touched upon bubonic plague, and said that he did not anticipate a scourge of this disease here, but urged great sanitary precautions.

ETIOLOGY OF YELLOW FEVER.

DR. WALTER REED, of Washington, D. C., read a paper on this subject, it being the joint production of himself, DR. JAMES CARROLL, DR. A. AGRAMONTE, and the late DR. JESSE W. LAZEAT. A series of clinical, bacteriological and pathological observations was narrated, comprising 18 cases of yellow fever. Of this number 11 were designated as severe cases of the disease, with 4 deaths;

3, as well-marked cases, with no deaths, and 4 as mild cases with no deaths. Blood cultures were made of 18 cases during life, and of 48 separate cultures made from the blood on various days of the disease and representing 115 bouillon inoculations, and 18 agar plates, they failed to find the bacillus icteroides in any of the tubes or plates. They failed to isolate the bacillus icteroides in 11 autopsies of yellow-fever patients. Having failed to isolate this bacillus either from the blood during life, or from the blood and organs of cadavers, two courses of procedure appeared to be worthy of attention, namely, 1, a careful study of the intestinal flora in yellow fever in comparison with the bacteria that might be isolated from the intestinal canal of healthy individuals in this vicinity, or of those sick with other diseases; or, 2, to give attention to the theory of the propagation of yellow fever by means of the mosquito. The essayists pursued the second line of investigation by reason of the well-known facts connected with the epidemiology of this disease, and by the brilliant work of Ross and the Italian observers in connection with the theory of the propagation of malaria by the mosquito. Their observations point to the presence of an intermediate host, such as the mosquito, which having taken the parasite into its stomach soon after the entrance of the patient into the noninfected house, was able, after a certain interval to reconvey the infecting agent to other individuals, thereby converting the noninfected house into an infected house. This interval would appear to be from nine to sixteen days, allowing for the period of incubation, which agrees fairly closely with the time required for the passage of the malarial parasite from the stomach of the mosquito to its salivary glands. In view of the foregoing observations they tested the theory of Finley on human beings. Experiments were made on 11 nonimmune individuals. The mosquito used in all cases was culex fasciatus, Fabr. Results: nine negatives, two positives. The two cases reported as positive, the authors detailed at great length.

Since the record one case in which a typical attack of yellow fever followed the bite of an infected mosquito within the usual period of incubation of the disease, and in which other sources of infection could be excluded, they feel confident that the publication of their detailed observations will excite renewed interest in the mosquito theory of the propagation of yellow fever, as first proposed by Finlay.

From their studies thus far of the disease, they conclude that the bacillus icteroides stands in no causative relation to yellow

fever, but, when present, should be considered as a secondary invader in this malady. The mosquito serves as an intermediate host for the parasite of yellow fever.

REPORT OF THE COMMITTEE ON THE ETIOLOGY OF YELLOW FEVER.

DR. HENRY B. HORLBECK, Charleston, S. C., made reference to previous contributions on this subject by the committee, and a digest given of the labors of bacteriologists who have during the past twelve months devoted themselves to the study of the bacillus icteroides. The report closed with the following conclusions from an article by Proust and Wurtz, published September 7, 1900:

The bacillus icteroides of Sanarelli seems to be the specific agent of yellow fever. That micro-organisms injected into certain animals, especially dogs, reproduce symptoms and lesions strikingly analogous to those observed in man. The toxin of this bacillus produces in animals the same effect as the microbe. The injection of this toxin into five individuals reproduced in man typical yellow fever, accompanied by its symptoms and anatomical lesions. The serum of individuals attacked with yellow fever agglutinates cultures of the bacillus icteroides. The bacillus has a prolonged vitality both in air and water (fresh and sea). It is certain that it is the same in the soil. Molds favor its development. These facts confirm conditions that have been known a long time. They explain the reawakening of yellow fever for a long time after the extinction of an epidemic, and the longevity of the disease aboard vessels in bad hygienic condition. No new prophylactic measures have come out in this knowledge of the etiology of the disease. As formerly, the prevention of yellow fever consists in applying the measures of isolation and of disinfection, and of improving the hygienic conditions.

DR. J. P. BERNALDEZ, of Mexico, spoke of human vaccine as a prophylactic of smallpox, and discussed its advantages and disadvantages.

DR. M. S. IGLESIAS, Vera Cruz, Mexico, spoke of the elements of defense against infection-contagious diseases at the port of Vera Cruz.

DR. F. W. ELGIN, of Philadelphia, read a paper on "The Influence of Temperature on Vaccine Virus." After detailing a series of experiments, he drew attention briefly to some of the lessons suggested by the experiments: Vaccine points were unreliable when stored for any length of time at any temperature. Virus on points might be inert, yet germs charged along with the

virus remained active, causing a form of irritation somewhat resembling vaccine vesicles, and known as spurious vaccination. Glycerin would not destroy the extraneous bacteria in lymph when stored at or below the freezing-point. Continued exposure of germs to low temperature, when constant, did not destroy their activity and but slightly decreased their number. Hot, and especially variable, temperatures speedily injured vaccine. Hot temperatures increased enormously the number of germs in fluid lymph other than that stored in glycerin.

DR. H. C. H. HEROLD, of Newark, N. J., read a paper on "Newark's Diphtheria Antitoxin Plant." Early in 1895, a laboratory for bacteriological research, with an attendant plant for the application of antitoxin for diphtheria, was established under the jurisdiction of the Board of Health of Newark. This department had been in practical operation for more than five years. The author presented the results of the experiment of establishing such a plant, and showed, by statistics of greatly reduced mortality from diphtheria by the use of antitoxin, that it was one of the best things the city officials and medical profession of that city had ever undertaken.

EVENING SESSION.

The evening session was opened with prayer by the Rev. Lewis Brown, Rector of St. Paul's Episcopal Church, at the close of which President Bryce introduced ex-President Harrison, who said:

GENERAL HARRISON'S ADDRESS.

"I thought of referring to the intense interest our people have in anything for the betterment of the human race, but in view of the sparse audience present I will strike these remarks from my speech. There is a tendency in affairs of this kind to call upon local talent as it applies to my friend, Mr. Harris, and a showing of old historical relics as applied to myself.

"If I have any mission or function here to-night it is to say to these distinguished scientists that the people of Indianapolis welcome them heartily.

"I think I can trust some of my medical friends not to show you some of the worst things in Indianapolis. What remarkable strides there have been made in the science of prolonging and bettering human life! When I was a boy we used to hunt bears, Indians and large things, but you go after the wicked little microbes; you hunt little things.

"When I was in New York last week there was a discussion going on against the advisability of allowing a porter to dust one off in the sleeping cars. They declared that it spread germs through the air. These views are only the superficial ones, however. It is a startling and unpleasant thing to think that our organs are the happy hunting grounds of millions of wicked little germs.

"The great work in the field of medicine in giving it a scientific direction has been amazing. They used to go upon the like-cures-like theory (a version from Lamentations, a cure for rheumatism). They didn't used to sterilize their instruments. Now surgery looks not only to the instruments, but to the walls, floors, hands, everything. We know from scripture that man is fearfully and wonderfully made; but you are now teaching us how he is being unmade.

"Sanitary science is making great strides. It is bringing into life cleanliness, health, safety. We ought to thank the doctors for going against their own interests in preventing men from getting sick.

"Who can tell what mysteries will be opened to the eyes of the future student? There are some here to-night, doubtless, who shall astonish the world and make great individual fame. The citizens of Indianapolis have the heart and mind to commend every good work, and especially do we bid godspeed to this noble body."

A. C. HARRIS' ADDRESS.

At the close of Gen. Harrison's address, the Hon. Addison C. Harris, Minister to Austria, was introduced to the audience. He spoke as follows:

"Mark Twain said to me in Vienna the other night, 'When you're going to make a speech don't think what you're going to say, and the people won't know what you're talking about.' I shall speak with due regard to that suggestion.

"I made the remark to an old country doctor not so long ago that great progress had been made in medical science. He said: 'Why, you must be crazy. I used to ride around the country roads and pick up patients with chills and fever at every door. But these hygienic health people have come along and made the farmers dig wells, and drain ditches until there is no use trying to practice medicine any more. There's no money in it.'

"I congratulate you men who have given all you have, all you hope to be, in the strife not only to cure, but to utterly prevent disease."

PRESIDENT BRYCE'S ADDRESS

Was an admirable digest of the progress of sanitary science from its birth in the period of the Renaissance down to the present time, and declared that scientific workers ought to take courage from what they have seen accomplished in this century. It will appear in full in our next issue.

Dr. Bryce's address was followed by a public reception.

BACTERIOLOGY AND CHEMISTRY.

The section on this subject met in the Pathological Hall of the Central Hospital, DR. THEOBALD SMITH, of Boston, chairman.

Dr. Smith read an introductory address in which he dwelt upon the fact that bacteriology had but just emerged from the experimental stage, and was now on a scientific basis.

MR. G. W. FULLER, of New York, read the report of the committee, of which he was chairman, on "Standard Methods of Water Analysis." He said that the report had been compiled from replies to one hundred and twenty-five letters sent to laboratories in all sections of the country, as to the methods pursued in water analysis.

DR. MONJARAIS, luico de Mayo, of San Luis Potosi, Mex., discussed "Variations of Colon Bacillus." DR. W. W. FORD, of Montreal, read a paper on "Variation in the Properties of Colon Bacilli Isolated from Man." DR. E. E. IRONS, of Chicago, read a paper on "Methods of Determining the Presence of B. Coli Communis in Water." The report of the committee on B. Coli Communis was read by the chairman, DR. V. A. MOORE, of Ithaca, N. Y. He related an account of a diphtheria epidemic which was started in that city from milk delivered by a dairyman whose family had suffered from acute tonsillitis. The eldest son, who attended to the milking of the cows, had been pronounced well and resumed his regular work, but scientific investigation demonstrated that he still had germs of the disease in his system.

DR. H. L. RUSSELL, of Madison, Wis., read a paper showing the degree of heat necessary to destroy the tubercle bacillus in milk without injuring commercially the value of the milk. He also read the report of the committee on the bacteriology of milk in its sanitary relations. As illustrating the peculiar way by which such germs find their way into milk, an incident occurring in a hospital at Leeds, England, was related. The nurses in that institution were in the habit of taking glasses of milk from the pantry up into the sick wards several hours before the milk was

drunk. An outbreak of typhoid fever occurred among the nurses. Investigation disclosed the practice to which they had been resorting, and when it was ordered discontinued the epidemic subsided.

DR. M. P. RAVANELL, of Philadelphia, read a paper on "A Quick Method of Diagnosing Rabies." He showed that the disease can be very readily and certainly discovered by certain lesions or disturbances of the ganglia or nerve centers. This, he said, is manifestly better than the old plan of inoculating animals and waiting sometimes two or three weeks for the disease to develop—the bitten persons meanwhile being in great distress of mind, not knowing whether they have rabies or not.

POLLUTION OF WATER SUPPLIES.

The second day's proceedings, after the election of new members and routine matters, opened with the "Report of the Committee on Pollution of Water Supply," by MR. GEORGE W. FULLER, of New York, chairman.

The report consisted of the formulation of records and summaries showing recent progress in the more important branches of the subject. With regard to quality, the water supply of the future should meet the following requirements: It should be free, or substantially free, from disease-producing germs. It should be clear and colorless, containing no noticeable turbidity or vegetable stain. It should be free from objectionable tastes and odors, as supplied to the consumer. It should be free from noticeable amounts of dissolved iron, such as make it unfit for household use. It should be free from excessive amounts of lime and magnesia, such as make water too hard for ordinary use. It should be carefully examined with regard to constituents capable of dissolving metals used in distributing pipes. Of the various branches of public works connected with the pollution of water supply, there was none in which such substantial progress had recently been made as in water purification. Ten years ago information upon this subject was very meagre, and comparatively few plants were in operation. During this period English sand-filter plants had been increased from about 1.5 to 19 acres, wth respective normal capacities of about 4,000,000 and 57,000,000 gallons daily; and the American or mechanical filter plants has been increased from about 12,000 to 90,000 square feet, with respective nominal capacities of about 36,000,000 and 270,000,000 gallons daily. Pro-

jected plants for some of the largest cities in the country showed that in the next few years there would be very rapid development in the application of both of the leading methods of purification. Of the various processes for the purification of water supplies, there were two general methods which had shown distinctly their practicability—namely, the English method of slow sand filtration, and the American method, employing rapid mechanical filters. For those waters which never possessed more than a slight or moderate amount of turbidity or dissolved vegetable color, the English method was somewhat more efficient, and as a rule was slightly cheaper for such waters. For those waters which for a long period of time contained excessive quantities of either finely divided clay, or of dissolved vegetable matter, there was now no practical method of purification without the use of coagulates and subsiding basins. While coagulants could be successfully used in connection with the English method of sand filtration, the American method in which coagulants were imperative, yielded somewhat more efficient and economical results as a rule.

MR. RUDOLPH HERING, of New York, said in part:

Our consumption in our cities is much greater than almost anywhere in Europe. It is hardly understood over there how this can be possible. We here know why this is so. It is not because we actually use very much water that we account for its discrepancy. The chief reason lies in the fact that we are more careless than in Europe. We allow our fixtures to leak, our pipes are not laid as well here as there. Besides, the figures given in reports of water boards do not represent the proper amount of consumption. There is no doubt the waste in consumption may be decreased gradually and brought to something near what it should be. The legitimate consumption here, as in Europe, is constantly increasing. Small manufacturing concerns have increased the consumption of water.

When it is recommended to purify a water supply, there comes the objection of expense, which attends purification works. It is said, 'Why not reduce the quantity of water immediately?' You cannot suddenly change the habits of a people; you cannot at once pull up the pipes in a city and make repairs. In the meantime you are obliged in this country, from a political standpoint, to estimate the cost of works to purify these large amounts of water. In New York city 115 gallons of water is allowed per day to each head of population. In Philadelphia 150 gallons per day per head is recommended for filtration.

MR. F. A. DAVIS, of the Indianapolis Water Company, brought out a number of points relative to the laws which permit of the pollution of streams from which water supplies are taken and those requiring the purveyors to furnish pure water. He said in part:

"The committee calls attention to the advancement in methods of purification of water, but it does not, in my judgment, emphasize the importance of keeping the streams from which the supply must be taken from being polluted. Water purveyors agree with the committee, but they believe that an ounce of prevention is worth a pound of cure, and that it is expecting too much of the water purveyors to furnish an ideal water when the city and manufacturers throw into the streams from which the supply is obtained, germs of death-producing disease." He quoted from a recent decision of the Supreme Court, and added: "If the law thus protects an individual in his broad acres, how much more important is it that it should protect streams from pollution whence water is drawn for the use of the inhabitants of the State?"

DR. JOHN W. HILL, of Boston, in speaking of surface water, said the cost of a supply filtered and made free from disease germs would be so great as to make the extensive use of water prohibitive to many, and that the stopping of the waste would permit in cities the construction and operation of purifying plants and yet not greatly increase the cost of the supply.

"Woman's Sanitary Work in Indianapolis," was the subject of a paper thesis by MISS HESTER MCCLUNG, of Indianapolis. The report of the Committee on Disinfectants was read by the chairman, Professor F. C. Robinson, of Brunswick, Me. Dr. Benjamin Lee promulgated the report of the committee selected to define what constitutes an epidemic. "A Suitable Dress for Defense Against Infectious Disease," was the title of a paper read by DR. JOHN H. S. FULTON, of Baltimore.

DR. F. H. NEWELL, Government Hydrographer, contributed a paper, showing some results of the investigation of stream pollution which has been made by the United States Geological Survey. He said that the Government, realizing the importance of public water supplies and their conservation and protection against pollution, has established a special division or branch of the geological survey under the title of "Board of Hydrography." Its duties are to ascertain the amount of water flowing in the various important streams in different parts of the country, to survey reservoir sites, examine geological conditions which govern currents

of water under ground, and to prepare maps and charts showing the depth at which water can probably be had in different localities. He referred to the work of this kind, which, he said, is being done with rare delicacy and thoroughness under the direction of Dr. Charles O. Probst, of Ohio, secretary of the Association. The speaker declared that engineers and sanitarians everywhere are bringing to the public attention the great importance of guarding and conserving sources of municipal water supplies, and said that it is the object of the Government Geological Survey to be prepared at all times to answer as far as possible all questions having to do with the public welfare and comfort.

DR. D. E. SALMON, Director of the Government Bureau of Animal Industry, Chairman of the Committee on Animal Diseases and Animal Food, read the report of the committee. The first disease the committee called attention to was glanders, which he said is easily communicable and very fatal to man. He urged the importance of careful observations being made of this malady, in view of the fact that serum for use in the treatment of many human ailments is obtained from horses. The doctor said that army horses are peculiarly liable to contract the disease, especially in time of war, on account of the extra exertion and frequent lack of full rations during such periods. He roundly condemned the carelessness of the United States Government in the matter of providing skilled and trained veterinarians in the army, saying that this is the only civilized country on the globe that does not have an organized and commissioned veterinary service to guard the health of its horses. The present veterinary service is distributed in the form of civilians among cavalry regiments and there is no organized head. He next took up the subject of rabies, commonly known as hydrophobia, and emphasized the importance of active measures looking to the stamping out of the disease. He cited statistics of many outbreaks of rabies, and showed the disease to be peculiarly virulent and almost invariably fatal to human beings. Misguided people who declare there is no such thing as hydrophobia communicated to man from animals, were sternly rebuked, Dr. Salmon declaring that their obstructive tactics have wrought incalculable harm in the way of deceiving people into a careless attitude towards this malevolent disease. The Pasteur treatment for rabies was highly commended by the committee, which also recommended that the health association take steps looking to the enlightenment of the public on the disease and its treatment, as well as means for its prevention.

The committee made strong recommendations on the subject of tuberculosis, asserting its belief in the communicability of the disease from infected cows through their milk. Here also the committee encountered learned men who controvert the theory, asserting that the difference in appearance of the bacillus of human tuberculosis and that of bovines indicates that the latter cannot communicate the disease to human beings. Dr. Salmon said that one had just as well argue that because the bacillus of cowpox differs from that of smallpox a human being cannot contract cowpox from a cow. He admitted that human tubercle germs do not produce tuberculosis in cows or other animals very readily by inoculation, but said that bovine tuberculosis undoubtedly is communicable. He said that it is a well-settled rule of bacteriology that a disease which is transmissible among many widely divergent varieties of animals is transmissible to man, and added that experiments have demonstrated that bovine tubercle germs are very fatal to rabbits, guinea pigs, dogs, sheep and goats. Dr. Salmon also inveighed against loose methods prevailing in many creameries by which the milk received from an infected herd is mixed with the general supply of milk on hand, and further, the practice of distributing, without previous sterilization, the waste milk and cream to be used as food for swine was condemned.

Dr. Bryce, President of the Association, commended Dr. Salmon's report and added a few terse, vigorous utterances on the subject of the care which ought to be employed in dairies to guard against the distribution of milk infected with tubercle bacilli. "I maintain from the standpoint of public health," said Dr. Bryce, "that there is no recourse in the interest of the public health except to test every cow in a dairy herd, and to remove every cow that reacts, that is, shows symptoms—no matter how slight—of tuberculosis. In my judgment the Association cannot divide on this question, but must absolutely say that no animal that reacts to the tuberculin test can be risked to give milk for one day longer."

Dr. H. M. Bracken, of Minnesota, supplemented the statements of Dr. Salmon's report with cases of animal disease found by sanitary authorities in his State. He related interesting facts concerning outbreaks of virulent animal diseases known as hæmorrhagic septicæmia (hitherto not reported as occurring among American cattle), meningitis, rabies and anthrax. Hæmorrhagic septicæmia, Dr. Bracken explained, is caused by the same bacillus which produces chicken cholera. He said that partially successful attempts have been made to immunize animals against its ravages

by inoculation with partly filtered and also with killed cultures of the bacillus. Concerning meningitis, Dr. Bracken cited the fact that guinea pigs and rabbits inoculated with its virus died in a very short time to show its deadly character. The doctor said that a man who removed the hide from the carcass of a horse which died of anthrax contracted the disease and was killed by it in a few days. Further facts and arguments in line with Dr. Salmon's report were offered by Dr. F. F. Wesbrook, of Minneapolis, Minn.

In the discussion of Dr. Newell's paper on government investigation of stream pollution, Dr. Josiah Hartzell, of Canton, President of the State Board of Health of Ohio, said that in his State investigations of streams will be continued until every water course and water shed is thoroughly understood. He said that the investigation as it has thus far progressed has revealed an astonishing degree of pollution of the public water supplies of the State. When Dr. Lee, of Pennsylvania, was asked by President Bryce for an expression on this subject, he raised quite a laugh by saying laconically: "Just at present, so far as my State is concerned, I would rather not say anything about stream pollution."

Mr. C. Monjeau, of Hamilton, O., delegate of the American Water Works Association, began the reading of a carefully prepared paper on the subject of "Our Domain's Most Threatening Danger," but was prevented by lack of time from finishing it—Mr. Monjeau stated that, in his opinion, the danger lies in the pollution of public sources of water supply by dumping into them sewage, garbage and other waste material. He said that his chief object in coming to the Indianapolis Convention was to enlist the co-operation of the Association in the crusade to educate the people generally upon the importance of this subject.

TEACHING OF HYGIENE AND GRANTING OF DEGREES OF DOCTOR OF PUBLIC HEALTH.

Dr. Wyatt Johnston, Montreal, compared methods of hygienic instruction in vogue in the United States and in foreign countries, with the result that the showing was decidedly favorable to the foreign countries. He inveighed strongly against the looseness of methods in this country by which men are able to secure positions as health officers or as members of boards of health without having the necessary qualification. Dr. Johnston urged the Association to consider this matter and endeavor to arrive at some standard for a purely hygienic education.

DR. L. P. JONES, Greenwich, Conn., outlined the following scheme for preventive medicine: The endowment of a chair of preventive medicine in each of the leading medical colleges of the country. The establishment of an institute, the members of which should be the incumbents of these chairs. An award of prizes by this institute for essays and discoveries of special merit in sanitary science. Establishment of fellowships for a limited number of advanced students.

DR. JUAN BRENA, Zacatecas, Mexico, dealt with the vice of smoking among youths, and offered suggestions as to the means of overcoming it.

REPORT OF THE COMMITTEE ON DISINFECTION.

PROF. F. C. ROBINSON, Brunswick, Me., presented the following conclusions: Household disinfection after infectious diseases, should combine the use of formaldehyde with other means. It can be safely relied on for all exposed surfaces, and these only. Formaldehyde requires moisture enough in the air to nearly saturate it for its most efficient working. There is much disagreement among experimenters as to the disinfection of tuberculous matter. One says a 2 per cent. solution of formaldehyde disinfects it; another, that even a 10 per cent. solution does not. Several say that formaldehyde gas applied as above destroys it; others deny this. Further experiments are needed. Soap is a poor disinfectant, but 1 per cent. caustic alkali, or 20 per cent. carbonate of alkali is efficient. Carbolic acid, less than a 5 per cent. solution, has little scientific value. The creosotes, as used in creolin, lysol and solutol, are safe disinfectants. Alcohol at from 50 to 75 per cent. has considerable disinfecting power, but not at other strengths. Most metallic salts, except those of mercury, have little disinfecting action. Bichlorid of mercury should be used in strength at least 5 to 1000 if tuberculous matter is to be disinfected. A fresh solution is more active than one which has stood for some weeks. The addition of salts does not increase the strength of a fresh solution, but prevents it from losing its strength as rapidly. Bright sunlight kills the tubercle bacillus in a few hours, and, as a rule, pathogenic bacteria keep their greatest virulence only when kept in the dark.

DR. JESUS CHICO, Guanajuato, Mexico, gave some hints about malaria from personal observations, in which he did not think the mosquito was as important a causative factor as had been attributed to it in distributing malaria, but in Mexico he thought the injudicious use of tropical fruits played an important rôle.

REPORT OF THE COMMITTEE TO DEFINE WHAT CONSTITUTES AN EPIDEMIC.

DR. BENJAMIN LEE, Philadelphia, read this report. In the minds of the public at large, and of many of the profession, the word epidemic still conveys an idea of universal atmospheric contamination. This is to be deplored, because, while on the one hand its use inspires an indefinable horror and creates panic, on the other hand it leads to the disregard of the very precautions which are of essential use in restricting the spread of the contagion, namely, those which should be taken in regard to the person and the excreta of the patient, his effects and his immediate environment.

In view of changed views as to the propagation of communicable diseases, the word epidemic has outgrown its usefulness. It has become the means of perpetuating false conceptions, and its official use may be misleading and mischievous. Without attempting any stricter, more comprehensive or more lucid definition of this word, the committee recommended that, as opportunity occurs in all laws and regulations in which certain executive action is made contingent on the declaration by health authorities of the existence of an epidemic, the phraseology shall be altered by omitting the word epidemic, and in place thereof inserting a brief statement of the condition calling for such action, as, for example, "whenever a communicable disease prevails to such an extent, or is spreading with such rapidity as in the opinion of the Board, to make it its duty to notify either the general public or the authorities of neighboring towns of the fact that such and such action shall be taken." The report of the committee was adopted and the committee discharged.

NATIONAL LEPER HOME.

DR. H. M. BRACKEN, of Minneapolis, chairman, presented this report. The committee dealt with the desirability of establishing national leprosaria in the United States. The records of Dr. Bracken for certain States, compared with those of Dr. Hyde, were as follows:

State.	Dr. Hyde.	Dr. Bracken.
North Dakota	2	2
South Dakota	..	1
Iowa	20	3
Minnesota	120	61
New Jersey	1	1

Ohio	..	1
Pennsylvania	6	6
Wisconsin	20	7

He presumed that Dr. Hyde's figures for Iowa and Wisconsin were estimated. Probably they were not too high. He had taken only those cases of which a history could be given. It is probable that the one hundred and twenty cases credited to Minnesota were taken from Dr. Hansen's report. It seemed to him that this, too, must be an estimate. If there were one hundred and twenty cases in Minnesota, the speaker could not understand why they were not on his records. If there were that many cases in 1888, the number for Minnesota was much higher than he had given, for many of the cases in the official list could not have possibly belonged to Dr. Hansen's one hundred and twenty. It might appear from the report of cases in the Northwest that leprosy was far more common in Minnesota than in the neighboring State. He could see no reason for this belief, for the lepers in this district were among the immigrants from Norway, Sweden, Iceland, and China. These people had quite a representation in all this group of States. He could attribute the more complete returns for Minnesota to the fact that there had been less agitation against leprosy in this than in some of the neighboring States; that with this lack of agitation against leprosy physicians reported their cases more willingly to the State Board of Health, which had endeavored during the last twenty years to palliate the sufferings of this unfortunate class; that Minnesota was fortunate in having among its physicians men who were familiar with leprosy, and who were interested in philanthropic work, and these physicians had given material aid to the State authorities engaged in securing a list of all lepers in Minnesota. Several lepers in the Minnesota list gave their history of a previous residence in Wisconsin, but their names in not a single instance appeared upon the Wisconsin records. Of the thirty-seven living lepers known to be resident in the Northwest, seventeen only were in Minnesota, and there was a strong possibility of two of these being dead, but he had no positive knowledge of the fact. He did not dwell upon these facts as an alarmist, but simply reminded the Association that leprosy had existed, did exist, and would continue to exist for years to come in all three countries represented in the Association.

A LEPROSARIUM should afford a comfortable home for lepers. This meant not only good buildings, but extensive grounds comprising many acres, where the lepers might have liberties and still

be in exclusion. The buildings connected with the leprosarium must combine the privileges of a home and of a hospital. Those who had the disease in mild form might need little if any medical care. They needed comfortable clothing and good food. With those in whom the disease was more advanced, the care should be that of a hospital patient, with medicines to lessen their suffering and dressings that would commend themselves to any surgeon. A leprosarium should resemble modern colonies for epileptics. It should furnish employment for those who were able to work, and amusement of various kinds for all. Two of the strongest medical societies in Minnesota had placed themselves on record as favoring the establishment of national leprosaria, and the American Dermatological Association had also appointed a committee to determine the best methods to be used in the care of lepers.

By resolution the Association placed itself on record as favorable to the establishment of national leprosaria.

DR. CRESSY L. WILBUR, of Lansing, Mich., presented the report of the committee on demography and statistics in their sanitary relations.

The following resolutions were introduced, discussed, and adopted:

1. *Resolved,* That the Association, recognizing the benefits of medical school inspection, heartily approves the efforts of boards of health and of education directed toward the establishment of systems of inspection. (Offered by Dr. Adolph Gehrmann.)

2. *Resolved,* That the Association approves of and encourages all efforts made by governments, whether national, state, or municipal, for the limitation of pollution of streams. (Offered by Mr. C. Monjeau.)

3. *Resolved,* That a committee of three be appointed, to be known as the committee on uniform municipal statistics, to take such steps as may seem practicable toward securing greater uniformity in all branches of municipal accounts, reports, and statistics, and particularly those branches relating to vital and sanitary statistics; said committee to have power to confer with similar committees from other societies already or hereafter appointed to the same general end, and to report at the next meeting of the Association. (Offered by Dr. Leal, of Paterson, N. J.)

ELECTION OF OFFICERS.

The following officers were elected for the ensuing year: *President,* Dr. Benjamin Lee, of Philadelphia; *First Vice-President,*

Mr. Rudolph Hering, of New York City; *Second Vice-President,* Dr. J. N. Hurty, of Indianapolis, Ind.; *Secretary,* Dr. Charles O. Probst, of Columbus, Ohio; *Treasurer,* Dr. Henry D. Holton, of Brattleboro, Vt.

Buffalo was selected as the place for holding the next annual meeting. The executive committee recommended that the time be fixed during the third week in September, 1901.

SOAPS.

By Jerome Walker, M. D.

Soap is one of the most important necessities of modern life. Properly made and properly used, it is a detergent or cleanser, a deodorizer, a disinfectant and an antiseptic. Improperly made, it is an irritant when applied to the human skin, and if it contains dirty and decomposing fat is a filthy application. It is well recognized by physicians that eruptions on the skin persist and recur with the use of particular kinds of soap. This cannot be wondered at when "spiculæ of bone, pus cells and fragments of connecting tissue" have been found in certain soaps. (Dr. L. Buckley, Sanitarian, Vol. IV.). Soap fat, or the fat which forms an essential ingredient of soap, by some soap makers and many collectors of it, means any sort of grease. Too often the fat used in soap making is putrifying kitchen refuse, fit perhaps for axle grease, but not for the human skin.

In an article in a recent number of The Medical News, entitled, "What Is the Best Soap to Use in Washing the Scalp?" the author rightly says "many women who make their living by caring for the hair, have some mysterious soap which they use, vaunt, and try to sell to their customers, but the composition of which they will not reveal." He then adds: "As a matter of fact, except in a very few conditions of the scalp, it makes little difference what sort of soap is used provided it is made by a good manufacturer." But it does matter very much what sort of soap is used. It is the *good soap* we want, whatever the character of the manufacturer may be.

Unfortunately the statements of the manufacturers of soap, as well as of other articles, as to the purity and usefulness of the products of their factories, are too frequently unreliable. Such

statements made, it may be, by men considered good, are looked upon as clever.

The seller of soap at a county fair, who stated that "cleanliness is akin to godliness, and no man can be clean unless he uses soap, and the only soap to use is *my* soap," etc., etc., was a fakir. Some people bought his soap because they admired his effrontery, others because they wanted to help him, but the majority, because he sold cheap soap, and they thought they were getting a bargain. The house to house peddler of soaps, especially if they are cheap, the store which sells "two cakes of pure toilet soap for five cents," finds plenty of customers.

Soaps are in reality salts, stearates, palmitates and oleates, chemical compounds of water, and fatty acids evolved in the disintegration of fat by heat, with soluble alkalies such as soda, potassa or borax. Good soap is made of pure and carefully compounded ingredients. There is no decomposed fat, and all, or nearly all, of the fat or oil used, is saponified, with no excess of alkali. Soaps attack dirt and render it soluble in water mainly by alkalinity. But there should be no irritation of the skin by their use. There should be just enough water to render the soap readily soluble, and no more. There is no admixture of foreign matter such as talcum, clay, etc., which is commonly present in the cheap toilet soaps. A good soap also has a uniform and permanent color and no disagreeable odor. It is not sticky, and when used upon the skin leaves it clean and soft.

The softness of soap depends to a considerable extent upon the amount of oil in the fat used, but potash soaps are usually softer than soda soaps.

The best toilet and medicinal soaps are made from vegetable oils or fresh fish oils. Their perfuming and coloring require great skill. Perfumes and coloring matter, if not carefully incorporated in soaps, may detract from their detergent properties. It is also a question whether in some of the medicinal soaps, i. e., soaps to which are added medicinal substances for external medicament, the detergent power is not impaired. This does not seem to be the case with Stiefels medicinal soaps, sold in this country by Schering & Glatz, and probably because the ingredients of the soap are pure and well compounded. A pure soap, even without any medicinal substance added, answers well oftentimes as a disinfectant, deodorizer and antiseptic though its cleaning powers alone recommend it to most persons.

More and more physicians and surgeons use pure soap as a lubricant of their hands and instruments, and recommend it for washing the scalp and skin. Experience has taught them its value.

Soaps such as Colgates's, some of the shaving soaps, ivory soap and Packer's Tar Soap may be classed under this head. The last named can hardly be classed as a medicinal soap, though it contains tar and glycerine. It is a reliable toilet soap, yet one of its uses is as a preventive of ivy poisoning, if applied to the skin soon after exposure to the poison, and if the suds are allowed to remain on for a time. Saponified resin added to tallow and soda, as in Higgins' German Soap, produced a good laundry soap. It could also be safely used upon the skin of adults without irritation. It was especially useful when the skin was grimy. It was of uniform texture and color, free from greasiness and unpleasant odor, was readily soluble and a good cleanser. The same properties belong to Pyle's O. K. Soap and Kirkman's Borax Soap.

Pearline is a pure soap powder of exceptional excellence, adaptable to almost all the purposes of a pure soap. But for bath, laundry use and bathing, it may be used to advantage less lavishly, and yet effectively, as compared with other soaps, than by the wrapper directions for its use. It possesses particular advantages for washing flannels. Being thoroughly soluble in soft water, when so dissolved in warm—not boiling—water, flannels may be cleansed by swirling them in the water without rubbing, and by subsequently swirling them in clear warm water easily deprived of the soap. By its careful use in this manner flannels may not only be thoroughly cleansed, but protected against shrinkage. As a lubricant for physicians and surgeons, and particularly for obstetricians' use, it is especially commendable for both convenience and efficiency.

Borax soap and pure toilet soaps only should be used for infants and children, or adults with delicate skins.

Finally, when we consider that soap is a necessity of modern life, for the laundry, the toilet, as a vehicle for medicinal applications, and for physicians and surgeons in the exercise of their functions, it is especially important that the soap used should be pure, and that the name of the manufacturer should be a synonym for honest goods.

THE GOSPEL OF CLEANLINESS IN MEDICINE.

We are often tempted to preach a series of sermons from the gospel of cleanliness in the practice of pharmacy, and the chief difficulty in the practical effect of such an effort lies in the fact that the class of persons engaged in pharmacy which it is especially desirable to reach do not very carefully read pharmaceutical journals. There is a good deal of preaching in this world that goes wide of the mark, for the reason that the sermons are intended for a class of hearers who are not present to profit by them.

Of one thing we are certain, and that is, there should be a radical change in prevailing conditions, found in many stores from which medicines are dispensed, in the matter of cleanliness.

Recently a case came under our observation where in a very critical case Epsom salt was required, and it was to be given in water which had been sterilized; a messenger was dispatched to the nearest drug store for a quarter pound of this salt, and the supply being low the amount was scraped from the bottom of a drawer by no means dust-proof, and on putting a portion of it in the perfectly clear water intended for its solution, the dust and dirt particles became instantly visible.

Was such a preparation fit for the stomach of a very critically ill patient?

One would hardly pour it into the stomach of a good horse. Epsom salt is a very common article in a drug store. It is sold by the pound, and many pharmacists buy it by the barrel as a grocer does sugar; but there is this to be considered, that sugar is sold so quickly in a grocery that but little opportunity is given for dust to accumulate upon it even if is wholly uncovered, while the drug may receive a heavy addition of foreign matter before it is finally dispensed.

Sugar is mostly used by persons in health, while drugs are given to those who are ill and often very dangerously ill.

This is only an illustration of many instances in which the pharmacist should use great care that the drugs he dispenses should be as free as possible from any addition that might make a patient worse instead of affording him relief.

Some druggists may be ambitious to sell Epsom salt at five cents per pound, but no self-respecting man who buys the best

article he can get and keeps it in a proper manner will do anything of the kind, because he is not compelled to do so to sustain or increase his patronage.

How many drug stores may be found in which the utensils are perfectly clean?

Wedgewood mortars are used for ointments and subsequently for emulsions without proper cleansing, when mortars of this kind should never be used for fatty substances of any kind.

Glass mortars or tiles of glass or porcelain for fats, ointments, or cerates, and porcelain mortars for powders, should be the rule, and each of them thoroughly cleansed and frequently sterilized.

Our pharmaceutical friends must not accuse us of crankiness on this supreme subject. There is no larger field for progress among pharmacists, and none for which scientific attainment in other directions calls more earnestly than in the direction of purer drugs and perfectly clean surroundings and conditions in every drug store. A surgeon with unclean hands and instruments not sterilized should not be more abhorred than a dirty drug store with unclean utensils and filthy practices. We shall continue to hammer at intervals along this line, for thereby we believe we are accomplishing something for the welfare of humanity and bringing in as far as our influence reaches better days for the pharmacist.—Editorial by W. R. Ogier, in the Midland Druggist.—*Bulletin of Pharmacy.*

WANTS AMERICA TO KILL MOSQUITOES.

"Mosquito malaria," says the London correspondent to the New York *Herald,* October 7, is just now monopolizing the attention of British medical men. Experiments just completed in London, in which healthy persons allowed themselves to be bitten by insects shipped from Rome, and were then promptly stricken with malaria, have demonstrated that a malarial parasite is transmitted by a particular species of mosquito.

Dr. Patrick Manson, the medical adviser of the Colonial Office, who was the projector of the theory, has pointed out in an interview that America has an immediate and vital interest in the mosquito problem. He asserts that in Cuba, Puerto Rico and the Philippines, as well as in many of the Southern States, there exist

tropical conditions peculiarly conducive to the inception and growth of malarial disease. He adds that unless the American Government employs heroic measures in the new island domains the danger will become as infectious as in its native regions of Africa.

"When I suggested six years ago," said Dr. Manson, "that malaria could be carried in the proboscis of a mosquito American scientists were the first to grasp the reasonableness of the idea and believe in it. The gratification I have consequently always felt has been brought forcibly home to me in the light of our recent demonstrations. In fact, America itself has now to grapple with an evil which has baffled the authorities in England's tropical possessions.

"While this is a matter of regret and deep concern, it is a promising phase of the situation from our standpoint. We believe that inventive American enterprise, now that that country has an incentive of its own, will manifest itself in a practical scheme of mosquito extermination. Thus far we have contented ourselves with prevention and defence, but the results have necessarily been doubtful. The evil cannot be eradicated save by radical measures. There must be a positive campaign against malaria breeding conditions, and fame and fortune await the man who will devise either machinery or a system of disinfection which will spell death for the mosquitoes."

Dr Manson suggests that America's educational system, "which is in some respects in advance of British ideas," ought properly to include a course in elementary hygiene. He says that children should be taught the rudimentary principle that malarial parasites flourish wherever stagnant water is permitted to accumulate, and that thus children would grow up with the knowledge firmly rooted in their minds that from the neglect of such simple conditions of health dangerous consequences are sure to follow.

Additional interest has been given to the mosquito agitation by the report of the commission sent to Nigeria by the Liverpool School of Tropical Medicine. The commission has sent word that the parasite which propagates elephantiasis, the disastrous skin disease among the natives of Africa, just as that which produces malaria, exists in the nose of the pestiferous insect which has made New Jersey famous.

MEDICAL JURISPRUDENCE IN AMERICA IN THE NINETEENTH CENTURY.*

By Clark Bell, Esq., L.L. D., President of the International Medico-Legal Congresses of New York, June, 1889; Chicago, 1893; Delegate from the Government of the United States to the Thirteenth International Medical Congress of 1900, at Paris; Honorary Member of the Medico-Legal Society of France, Etc.

The following have been President of the Medico-Legal Society:

Dr. Thomas C. Finnell was the first President of the Medico-Legal Society, elected October, 1867, although Dr. Wooster Beach had presided at the earlier meetings of the Society. Both these gentlemen were coroner's physicians, and also were in general practice.

Judge David McAdam, now on the Supreme Bench; Dr. James J. O'Dea, author of a work on suicide; Hon. J. F. Miller; Dr. Stephen Rogers; Prof. John H. Anthon; Francis Tillon; Dr. S. N. Leo, and the brothers William and Jacob Shrady, of the bar and of the medical profession were among the earlier members.

Hon. Jacob F. Miller was elected in the fall of 1868 and served in 1869. He was a prominent member of the Bar of the City of New York, and was re-elected President of the Society years later and served for the year 1897.

Dr. Stephen Rogers was elected President in 1870. He was a man of great energy, and threw himself into the work of enlarging the Society. Dr. Rogers influenced members of the Bar and medical men to unite with the Society. He served two years —1871 and 1872.

Mr. Clark Bell was elected the fourth President in the fall of 1872, and served three years—1873, 1874 and 1875. He founded the library of the Society, and when he made his retiring address, November, 1875, the Society numbered over 400 members, about equally divided between the professions of law and medicine.

In 1874 the Society, during Mr. Bell's administration, published Volume One of Medico-Legal Papers in an edition of 1,000 copies, and promised to follow it with other volumes later.

*Continued from page 446 (November number).—From advance sheets "Medico-Legal Journal."

Professor Frank Hastings Hamilton, author of "Fractures and Dislocations," one of the prominent physicians in the city, and an eminent authority in malpractice cases, succeeded Mr. Bell, and was elected in the fall of 1875 President of the Society, and served two terms—1876 and 1877.

Hon. George H. Yeaman, a prominent lawyer at the New York City Bar, who had served as Minister from the United States to Denmark, succeeded Professor Hamilton as President. He was elected in the fall of 1877, and served two terms—1878 and 1879.

Dr. Charles S. Wood, a physician in general practice, succeeded Mr. Yeaman. He was elected President in the fall of 1879, and served two terms—in the years 1880 and 1881.

In the fall of 1881, Mr. Clark Bell was again called to the chair of the Society and re-elected President, serving three terms—1882, 1883 and 1884; and it was in 1884, during Mr. Bell's presidency, that Volumes Two and Three of Medico-Legal Papers, which had been announced in 1875, were finally published.

Mr. Bell declining a re-election in the fall of 1884, Prof. R. Ogden Doremus was elected President, an eminent chemist and toxicologist, and the first chemist that had occupied the chair of the Society. He served in 1885.

Dr. Isaac Lewis Peet, at the head of the Institution for the Education of the Deaf and Dumb, was elected President of the Society in the fall of 1885, and he served during the year 1886.

In 1886, at the fall election, Mr. Clark Bell, by an almost unanimous vote, was again re-elected President of the Society, and served five terms—1887, 1888, 1889, 1890 and 1891.

The Medico-Legal Journal had been founded by Mr. Bell in June, 1883, and made the organ of the Society. In 1889 a new and illustrated edition of Series 1 Medico-Legal Papers was issued by the Society, and steps taken to secure the publication of volume four and five Medico-Legal Papers, which were nearly completed during Mr. Bell's administration.

In June, 1889, an International Congress of Medical Jurisprudence was held in New York under the auspices of the Medico-Legal Society, and a Bulletin of the Congress was subsequently published.

In the fall of 1891 Mr. Bell declined to continue in the presidential chair of the Society longer, and nominated Ex-Judge Henderson M. Somerville, late of the Supreme Court of Alabama, for the office, who was elected, and Judge Somerville served for the year 1892.

He was renominated for 1893, but declined, and Mr. Bell was renominated and declined. Judge Abram H. Dailey, Ex-Surrogate of Kings County, was elected President of the Society, and served as President for the year 1893.

In the fall of 1893, Judge Dailey declining a re-election, Dr. Hubbard W. Mitchell of New York City, a prominent physician in general practice, was elected President of the Society, and served two terms—in the years 1894 and 1895.

In the fall of 1895, Dr. S. B. W. McLeod, a physician in general practice, was elected President of the Society, and served for the year 1896.

He was succeeded by the Hon. Jacob F. Miller, one of the earlier Presidents of the Society, who was elected in the fall of 1896, and served in the year 1897.

Dr. S. B. W. McLeod was re-elected President in the fall of 1897, and served during the year 1898.

He was succeeded by Mr. Albert Bach, Assistant Corporation Counsel of New York City, who had served as Vice President of the Society for many years, and who had been an active worker in the body for many years.

Mr. Bach was elected in the fall of 1898, and served during the year 1899.

In the fall of 1899, Mr. Clark Bell was unanimously re-elected President of the Society, and resumed the Chair at the January meeting of 1900, a position which he now holds.

WORKS ON MEDICAL JURISPRUDENCE.

Besides those already named, Prof. James J. Elwell, of the Cleveland, Ohio, Bar contributed a volume, "Elwell's Medical Jurisprudence," which had a large sale among lawyers and jurists.

Professor J. J. Ordinoux was the author of a treatise entitled, "The Jurisprudence of Medicine," which was published in 1869, and which was greatly urged at that time and influenced public opinion and legislation at that period.

Allan McLane Hamilton, M. D., published a work in 1894 entitled, "Hamilton's System of Legal Medicine."

Francis Wharton, M. D., published in 1885 a small work on "Mental Unsoundness," which was followed in the same year by a work entitled, "A Treatise on Medical Jurisprudence," by Francis Wharton and Morton Stillé, M. D. This was an elaborate work of 815 pages, and successive editions were published in 1860, 1872 and 1873; and in 1882 a fourth edition was published. The work is a valuable contribution to the science.

Professor William A. Hammond published several works, and edited a Journal of Psychological Medicine for several years.

Dean's Medical Jurisprudence was published early, but did not supersede Beck or attain as much prominence as Prof. Elwell's work. He was a contemporary of Beck.

The most complete bibliographical contribution relating to the works on American Medical Jurisprudence, and also the best enumeration of the general treatises of Italy, Germany, France and Great Britain, up to September, 1876, is that made by Prof. Stanford E. Chaille in his masterly address to the International Medical Congress in Philadelphia in 1876, to which I refer the student, with great confidence.

If my time permit, I will submit an appendix of the later works in America, since September, 1876.

THE MEDICO-LEGAL SOCIETY OF NEW YORK, AND ITS INFLUENCE AND LABOR.

While the organization of this body was completed in 1868, and duly incorporated under the laws of New York, it was not until about 1871 or 1872 that it was assigned any prominent position as an element in the progress of the science.

It grew from that date into a powerful and prominent body, composed of both professions of Law and Medicine.

In June, 1883, the Medico-Legal Journal was founded, which has since been continued as the organ of that body, and for the last quarter of the 19th Century has been the most conspicuous and prominent factor in the progress and development of the science upon the American Continent.

This Society had already become a National organization prior to 1889, and it then became International, having Vice Presidents, not only in every State and Territory in the American Union, but in nearly every country among the civilized nations of the globe.

In 1889 the first International Congress of Medical Jurisprudence was held under its auspices in the City of New York.

The next International Congress of Medical Jurisprudence was held at Chicago on the occasion of the International Exposition of that year; and in September, 1895, a Congress of Medical Jurisprudence was held in the Federal Court Buildings, New York City, which attracted more attention than any of the prior movements.

Bulletins of the various Congresses have been published, and the last one contains a large number of contributions of great public interest and value.

This Society published three volumes of its earlier papers, and contemplates the publication of two other volumes of the papers read before it, to bring its labors down to the date of the beginning of the Medico-Legal Journal.

DANIEL WEBSTER DISCOMFITED BY A WOMAN ON NEATNESS.

It was in a somewhat famous will case that was tried in the Supreme Court of Massachusetts about sixty years ago. Mr. Webster was counselor for the appellant, Mrs. Greenough, wife of a clergyman by that name, a woman of great self-possession and decision of character, was called to the stand as a witness by Mr. Webster's opposing counsel. Mr. Webster, at a glance, had the sagacity to foresee that her testimony, if it contained anything of importance, would have great weight with the court and jury. He therefore determined, if possible, to break her up. And when she answered to the first question put to her, "I believe——" Webster roared out:

"We don't want to hear what you believe; we want to hear what you know!"

Mrs. Greenough replied, "That is just what I was about to say, sir," and went on with her testimony.

And notwithstanding his repeated efforts to disconcert her, she pursued the even tenor of her way, until Webster, becoming quite fearful of the result, arose apparently in great agitation, and drawing out his large snuff-box thrust his thumb and finger to the very bottom, and carrying the deep pinch to both nostrils, drew it up with much apparent enjoyment; and then, taking from his pocket a very large handkerchief, which flowed from his hand to his feet, he gathered it up to his nose and blew with a blast that resounded throughout the crowded court room, and proceeded: "Mrs. Greenough, was Mrs. Bradagan (the maker of the will) a neat woman?"

Mrs. Greenough—I cannot give you very full information as to that, sir; she had one very dirty habit.

Webster—What was that, ma'am?

Mrs. Greenough—She took snuff.

The roar of laughter by the assembly was such that the future defender of the Constitution thereupon subsided, and neither rose nor spoke again until after Mrs. Greenough had vacated her chair for another witness—having ample time to reflect upon the inglorious history of the man who had a stone dropped on his head by a self-possessed woman.

KINGS COUNTY MEDICAL SOCIETY MEMORIAL MEETING.

A memorial service was held by the Medical Society of the County of Kings on Sunday evening, November 4, in the hall of its library building, 1,313 Bedford avenue, in commemoration of those members who died during the present Society year, which began January 17, 1900.

John Cargill Shaw, M. D.; Charles Edwin West, M. D., LL. D.; John Cooper, M. D., M. R. C. S.; Aaron Edgerton Peck, M. D.; Robert Francis Cunnion, M. D.; Henry Dwight Bliss, M. D.; Landon Carter Gray, M. D.; Alexander Johnston Chalmers Skene, M. D., LL. D.; Julius Charles Rappold, M. D.; Frank Stephen Mulbury, M. D., and William Webb Browning, M. D., were the members eulogized.

Dr. Lewis Pilcher, president of the society, presided, and with him on the platform were Drs. George McNaughton, Frank E. West, Henry G. Fairbairn, Joseph H. Hunt and Walter B. Chase, trustees of the Society. The hall was filled with medical men and their wives and the friends of the deceased members.

Dr. Pilcher introduced each speaker, with a kindly reference to the subject of the various addresses. They were mainly biographical sketches, with some estimates of the characters of the deceased.

The first speaker was Dr. Homer L. Bartlett, one of the oldest members of the society. He struck the keynote of the addresses. He said that it was a novel service and should not be a solemn dirge, but a sacred hymn in praise of the characters of those departed. He spoke of Dr. John Campbell Shaw, saying that the task assigned to him by the Society was a pleasant one, as the man was well known to the public as one of the frankest of modern neurologists. Dr. Bartlett told of Dr. E. M. Chapin, the first resident physician of the Kings County Insane Asylum, who, while a learned man, was not in favor of non-restraint of the insane. He did away with many of the cruel methods theretofore practiced. Dr. Carlos L. McDonald followed him and bettered the cruel methods a little, but not much. In 1873 Dr. Shaw was appointed and for four years he studied the methods and resolved to improve them. In 1879 he reported in favor of the plan of non-restraint and out of door employment. In 1883 he carried his point and it was a proud day for him when this occurred. It had

been accomplished only after he had suffered contumely and even abuse, and then he saw his methods adopted by institutions all over the country. His work did not stop here, for in every department of the institution he tried to have the insane treated as human beings.

Dr. Joshua M. Van Cott said: "It is with deep feeling I appear before you to talk about Dr. West. Dr. West was a friend of my father, and his nephew was long in this Society. It has been said that if Dr. West had lived in the environment of a Gladstone or a Bismarck, he would have measured up to them. His character was fascinating, not only because of his rare knowledge, but because of his pleasing personality. He was a man who had just one platform. In everything he saw the surety of the existence of a God and the proof of His loving kindness."

Dr. Joseph H. Hunt said that Dr. Cooper was one of the noblest types of a physician of the old school and a type of the perfect man. He gave an outline of Dr. Cooper's life. He quoted his work as an introducer of cowpox as a preventive of smallpox in South Africa. He told at length of the wonderful advancement in the science of medicine since Dr. Cooper's birth. Although Dr. Cooper did not take advantage of all these modern methods, he said he was satisfied he had saved enough lives to give him satisfaction. Dr. Hunt said Dr. Cooper had been a member of the Medical Society of Kings County since 1859.

Dr. William Schroeder eulogized Dr. Aaron Edgerton Peck and Dr. Robert Francis Cunnion. He said that each of these was what might be called the silent member of the society. They had each of them done work among the poorer class. As to Dr. Peck, he had for forty years been in the profession and most of his work had been done among the poor in the lower part of New York City, and Peck slip was named after his family. Most of his reward was in the thanks of these poor people.

Dr. Stuart H. Brenton spoke to the memory of Dr. Henry Dwight Bliss. He told of his early life as a business boy at Holly, N. Y. He told of his coming to this borough and building up a lucrative practice and of his death after a long illness. He said that in his death a faithful friend, a typical gentleman and a scholarly physician had passed away.

Dr. George R. Fowler spoke of Dr. Landon Carter Gray. Dr. Fowler told of his early acquaintance with Dr. Gray in Bellevue. In spite of the doctor's defective sight, he progressed in his favorite profession. He became one of the famous neurologists of the

world. At first he was a physician in this borough and afterward went to Manhattan, where he attained great prominence. He was a conscientious searcher after truth, and submitted to the arguments of various theologians to settle his mind on a future state. He was honest in all things, paying the debts of another to the extent of thousands of dollars. We all are ready to lay a sprig of acacia on his coffin, saying, "Alas, my brother."

Dr. Joseph H. Raymond said in part of the late Alexander Johnson Chalmers Skene, M. D., LLD.:

"The part which has been assigned to me in the memorial service of this evening is one which any member of this society might well consider an honor and a privilege to be called upon to perform. But I feel myself utterly incapable to delineate to the members of this Society the traits and character of this eminent physician. It is often difficult enough to portray the characteristics of a man who is renowned for some one thing, whose development, moral or intellectual, has been principally in one direction, as a great preacher or inventor, but when the individual whose attainments and character are to be portrayed is one whose development has been symmetrical, along many lines, the difficulties are multiplied manifold. It is such a task as this that confronts the writer, and that he attempts it even though the result is incomplete and unsatisfactory, may well be looked upon as rashness in the extreme. There are few men in our profession whose biographies have been so accurately written as his has been. No biographical publication of the present day, whether national or local, but contains a sketch of greater or less completeness of him who, we think, concededly occupied in both the professional and lay mind, the foremost place among the physicians of the world. We doubt whether any American physician, using that term in its broadest and most comprehensive sense, had a wider international reputation than he did. Wherever American medicine was known, there was also known the name of Dr. Alexander J. C. Skene, and whatever contribution the medical profession of this city has made to the establishment and maintenance of its reputation as a city, the part which his name and fame have had therein has been a most significant one.

"Those who have seen the books in Dr. Skene's library have doubtless been attracted by the dagger and wolf's head which figure on their labels. These were taken from the armorial bearings of the Skene family, one of the early members of which, ald of the Isles, having in 1010 saved the life of Malcolm II.,

King of Scotland, by thrusting his arm, the hand of which grasped a dirk, into the mouth of a ravenous wolf that had attacked the king, and, stabbing him to the heart, rescued his liege lord from impending death. For this knightly service the king gave him the lands which form the parish of Skene, in Aberdeenshire. This incident is suggestive of some of the traits possessed by the subject of this sketch. Like his progenitor, Dr. Skene was ever brave and alert, ready to respond to the call of those who needed his aid, not only in the palace, but also in the hovel; and his arm with knife in hand has been the means of rescuing from impending death many lives as dear to their possessors and loved ones as was ever the life of a king to himself or his loyal subjects.

"Of the boyhood days of Dr. Skene little is known. He was a passionate lover of nature, spending much of his leisure time in fields and woods. Nor was this love lessened as the years rolled by. No one more thoroughly enjoyed his vacations than did he; he found in them a true recreation, returning from them with renewed strength and ambition. Had his life been prolonged he would doubtless soon have retired from practice and spent his remaining years where he could uninterruptedly gaze upon the lofty peaks of the Catskill range which he had learned to know and love so well. This remainder of a busy life would not have been spent in idleness; he was never idle, and we doubt if he ever could be, so imbued was he with a sense of the value of time and the duty of every one to utilize every moment for the benefit of his fellow man. He would have spent it in the study of art and literature, molding in clay some beloved friend or master in his profession, as he did Thomas and Sims, or contributing by his pen to the sum of human knowledge. A faint conception of what his home was to him may be gathered from the introduction to an unpublished book of his on 'Rest,' among the last of his writings.

"This bent toward the profession of medicine was evinced early in his boyhood days. One who knew him well while he was still a lad says that in nothing did he take more pleasure than in putting on his father's hat and with cane in hand making his mother a professional visit, feeling her pulse and prescribing for her bread-crumbs mixed with water and powdered licorice; and he would rather sit by the bedside of the sick than to amuse himself with games. His grief at his mother's death was so great that Scotland lost all charm for him, and at the age of eighteen he turned his face westward, going to Canada, where lived his eldest brother, William Skene, a surveyor and civil engineer. There he continued

his studies, subsequently going to the University of Michigan for his medical education, which he completed at the Long Island College Hospital, receiving the degree of doctor of medicine from that institution in 1863, and being at the time of his death the most distinguished of its alumni.

"His services to his adopted country in 1863 and 1864, as Acting Assistant Surgeon, United States Volunteers, at Port Royal, South Carolina, and at Decamp's Hospital, David's Island, New York, together with his subsequent career as physician, teacher and author, have been so admirably and completely chronicled by the historical committee of this society, and others, that a mere reference to them here will suffice. Of Dr. Skene, an eminent English surgeon, after his return to his native country, from a visit to America, said: 'Among all the surgeons I have seen in America—and I have seen great ones—I think Dr. Skene is one of the most careful, rapid and successful operators in that country. He is also a superior teacher, his lectures, all extemporaneous, are clear and practical, and his style holds his hearers completely.' That the estimate of this English surgeon is an under rather than an over estimate of Dr. Skene's skill, all who have seen him operate can testify; while if the more than two thousand students who have listened to his teaching could give their testimony to his efficiency as a teacher, it would abundantly confirm all that the English surgeon has said by this report.

"What a glorious record he has left as a teacher! What blessings to mankind have been scattered by the thousands of his students, some of whom have passed away, but the vast majority of whom are now practising the precepts which he inculcated, to the benefit not only of the present but of future generations, and not a few of whom are themselves teachers, giving freely to others that which they received from them.

"Dr. Skene's love of music was great. In earlier years he played the violin, but after hearing that master, Ole Bull, he gave it up, saying that as he did not have time to make himself proficient he would abandon it altogether. This was very characteristic of him. If he attempted to do a thing and found that he could not do it or had not the time to devote to its mastery without taking time from what was in the line of his duty or of his profession, he would abandon it at once. It was this perseverance in his professional work, mastering its every detail, and his abandonment of everything which led away from it, that largely accounts for his success.

"He was also very fond of singing, and though few of us have ever heard him, those who have partaken of his hospitality in 'Bonnie Em,' his mountain home among the Catskills, will not soon forget the rich melody of his voice. The remembrance of his own early life made him a strong friend of youth, and many a young man could tell of kindness done by him which had lifted them over obstacles that without his aid would have been well nigh insurmountable and have set them forward in the path of success.

"This brief and inadequate portrayal of some of the leading traits of his character would lack a most important feature did it not mention his love for animals. This was especially manifested in his affection for horses and dogs, though by no means confined to them. There was nothing that would arouse in him greater indignation than cruelty to one of these dumb creatures, and the society for the prevention of such cruelty, founded by Henry Bergh, had no more zealous advocate or supporter than he.

"I am sure that if the sentiments of the members of this society were uttered, they would be found in perfect harmony with the tribute paid him by a beloved friend, who said: 'Those who had the blessing of his friendship or the honor of his acquaintance, unite in extolling the goodness of his heart and the many moral and intellectual attributes of his many-sided mind. All who came near him felt the presence of a rare spirit, radiating its brilliancy alike undiminished in, and unconscious of, its luster."

Dr. Jacob Fules spoke for Dr. Julius Charles Rappold. He told of his experience as an army surgeon during the Civil War. He spoke of his sincerity and kindness and said he served his profession faithfully, keeping step with the advancing strides of science.

Dr. Edgar A. Day spoke for Dr. Frank Stephen Mulbury. His estimate of Dr. Mulbury was that his position in the medical profession was attained by perseverance and persistence, courage and confidence. He gave proof of that constantly in his life. He was a contributor to the medical journals to a large extent.

Dr. Silas H. Bartley, the last speaker, said of Dr. Webb Browning that he would consider the character of the dead. He expressed wonder that his career should have been so abruptly closed. "There are various ways," said he, "in which we may win success, but all are according to our ideas. Steadfast in action, upright in principle and honest in all things, Dr. Browning was marked among men for these characteristics. He was progressive in the pursuit of his profession. The world would be better if more were

like him." Dr. Bartley said his love of family was marked. It is the lot of physicians, said he, to die before old age comes upon them, as our lists to-night shows.

President Pilcher in conclusion said: "The young and the old, those comparatively obscure and those of world-wide fame, each has done what he could. Such is the record of those we have spoken of to-night and whom we are glad to have honored."

The meeting was then closed.

SOME REASONS FOR THE HIGH DEATH RATE OF PUERTO RICO.

From *Boston Medical and Surgical Journal,* October 4, 1900.

SAN JUAN, PUERTO RICO, September 25, 1900.

MR. EDITOR: The high death rate of Puerto Rico is now attracting the attention of the public press. The causes for this have been engaging the thoughts of Americans since the invasion. When chief surgeon of the District of Ponce, the late General Henry at my request convened a board of survey, October 12, 1898, consisting of an engineer officer, Captain Ellicot, and a medical officer, Assistant Surgeon Proben, to report upon the water supply of Ponce and its possible contamination by typhoid germs.

The prevalence of typhoid fever in the city of Ponce and the suspicious character of its water supply came under my observation on assuming charge of the office, September 30, 1898. The board was called to see what measures, if any, could be taken for prevention and improvement.

The members of the board deserve great credit for the interest they took in the subject and the thoroughness of their investigation in the limited time at their disposal.

The reservoir for the supply of Ponce was reported open to various sources of contamination, and the aqueduct was sagged at various points, admitting water from the outside. The unsavory condition of the river above the intake is best given in the words of the report: "All told there are 143 huts along the stream; of these, 20 are along the branches and 123 along the main stream. All are within 300 feet of the river; there are 40 within fifty feet; some directly within 20 feet. Where the roads cross the river habitation is always marked and here the greatest source of pollution occurs, especially within 3, 5, and 7 miles above the dam. Forty-seven

such huts were counted, which were situated almost directly on the stream, and these form a very prolific source of contagious elements of pollution. These small huts are entirely devoid of sanitary arrangements; they contain on an average four to five persons each, who dispose of their excreta directly into the river. They use the water for washing their clothes, etc., and for watering their cattle. All refuse of any character is thrown directly into the stream. We have been unable to find any water closet, except one . . . that is extremely filthy. . . . Along the watershed we have been able to count forty pigs and a number of dogs. Four or five places had pigpens directly near the river edge.

This lengthy extract will serve to show the terrible contamination to which the water supply of Ponce is exposed. Yet it must be remembered that only the larger towns have any attempt at a water system. The other towns dip the water in gallons or barrels from the river in which hundreds of women are washing clothes, entrails of animals, etc., and which receives the excreta of hundreds, nay thousands, of people living along its banks, for we must not forget that Puerto Rico is about the most thickly populated country in the world, and that a privy of any kind is practically unknown in the country districts.

Since this report was made the anchylostoma has been found in a large percentage of the inhabitants, which has been stated to be the cause of the anemia to which the majority of the deaths are due in the tropics. These parasites' eggs are discharged with the excreta, find their way into the water, which is drunk by the inhabitants, so that few escape it.

The proceedings of the board were endorsed by me, recommending a system of sand filtration that had been considered some years previous as the only reliable means of purification. This suggestion, because of its cost, was not adopted, but since my departure from that city I learned that a system of filtration was built across the river. This, as was natural to suppose, was carried away by the first heavy rainfall, so that to-day there is no system of filtration worthy of the name in the whole island, and the water supply is drawn from rivers of which the board describes one of the purest.

Add to this that no city except San Juan, and that so imperfect as to be unworthy of the name, contains a system of sewerage; that in towns where any kind of water closet exists it is only partitioned off from the kitchen, or next door to it, and that, finally, poor families in towns live nearly always in single rooms, without

ventilation and as crowded as sardines in a box. In towns as large as Cayey many of the houses have no kind of closet and the people have to attend to the wants of Nature the best way they can.

While in Ponce I went to investigate an epidemic of smallpox in the neighboring town of Penuelas. There were 30 cases, with several deaths. Similar epidemics were prevalent all over the island. I was one of the directors of the five districts into which the island was divided for vaccination purposes. I accounted for 160,000 people in the District of Guayaman and the other directors did better in their districts. Since then, according to returns, there has not been a death from smallpox on the island.

Now if the *Alcaldes* will only spend the money of the towns for a pure sand-filtered water supply instead of for the miserable politics of Puerto Rico; if they will provide sufficient closets for their districts and some adequate system of excreta removal; if sufficient habitations will be provided for the poor, then we can expect to hear as little about high death rate as we now hear about smallpox.

Many and many a time since my arrival in Puerto Rico I have concluded that were it not naturally one of the most healthy sites on the globe, all the people would long since have been dead from some epidemic or other.

Very truly yours,

P. R. EGAN, M.D.,
Surgeon U. S. Army.

MEDICAL EXCERPT.

BY T. P. CORBALLY A.M., M.D.

PERICARDITIS, MYOCARDITIS, AND TYPHOID PLEURISY.—M. Bocaloglu has made a series of very interesting experiments (Progrès Médical, October 26, 1900), presented to the Société de Biologie, to determine the action of the bacillus of typhoid on the heart, by injections, made directly into the cavity of the pericardium. By these injections of the living bacillus, microbic bodies were killed by 58° C., and also by typhic bouillon after filtration. The results of the first two methods are preferable. The cardiac symphosis was found by large fibrinous masses with vessels of recent formation, leucocytes and red globules disseminated in the tissue of the fibrine; the myocardiac changes were great, and seated not

only in the visceral pericardium, but extending deeply into the endocardium; the myocardiac lesions are very considerable and the osmic acid is shown with fine dark granulations in the muscular fibres; granular degeneration was found everywhere and very few of the fibres preserved their regular longitudinal or transversal relations.

CYTODIAGNOSIS OF TUBERCULAR MENINGITIS.—MM. Widal, Sicard, and Ravant have recently made a very important study of the histology of serous effusion in cerebro-spinal meningitis and in tubercular meningitis by employing the method used by them for determining the effusion in pleurisy. Presented to the Société de Biologie.

In the normal state the cephalo-rachidian liquid does not contain marked elements. In acute diseases (typhoid fever, acute phthisis, Bright's disease, cardiopathy with anasarca), in the different diseases of the nervous system (general progressive paralysis), in sclerosis en plaques, hemiplegias, chronic chorea, suboccipital Pott's disease, the cephalo-rachidian liquid does not contain cells.

In acute inflammation of the meninges, on the contrary, various forms of these elements are met with.

In twelve cases of tubercular meningitis which were verified at the autopsy in individuals of different ages the lymphocites were numerous; in 2 cases the red globules predominated; in 4 cases a few polynucleaires were found; never did the administration of the liquids produce any secondary infection; in 2 cases of cerebro-spinal meningitis, on the contrary, the polynucleaires were more numerous than the lymphocites and to such an extent that they were quite perceptible.

It is then the lymphocytosis that characterizes the effusions of tubercular meningitis.—Le Progrès Médical, October 26, 1900.

PLEURISY FROM BACILLUS OF EBERTH AFTER TYPHOID.—M. Siredey presents a case of typhoid fever, the development of which was quite normal, to the Société Médicale des Hopitaux. The patient was treated with cold baths. For five days the disease was entirely without fever; he was then taken with light fever and some gastric disturbance. For twelve days the patient was considered cured, when the temperature began progressively to increase as in a relapse of the typhoid condition. M. Seredey then found symptoms of pleuro-pneumonia and an exploring puncture revealed the existence of pus containing the bacillus of Eberth. A puncture in-

tended to evacuate the contents of the cavity yielded only a few cubic centimetres of a sero-purulent liquid. The patient recovered without further accident. These pleurisies with the bacillus of Eberth are generally accompanied with a very small amount of pus, while on auscultation the quantity seemed quite large, because of the broncho-pneumonia in the neighboring lung. In this case the pleurisy developed very late a condition which is not the rule in pleurisies with the bacillus of Eberth.

THE THIRD PAN-AMERICAN MEDICAL CONGRESS.

Dr. CORONADO, the Secretary of the Committee of Organization, has already sent to the medical profession a circular, accompanied with the rules, general and special, for the Congress, which will assemble in Havana on the 26th, 27th, 28th and 29th of December, 1900.

The sections of the Congress will be as follows:

1. Medicine.
2. General surgery.
3. Military medicine and surgery.
4. Obstetrics.
5. Gynecology and abdominal surgery.
6. Therapeutics.
7. Anatomy.
8. Physiology.
9. Diseases of children.
10. Pathology.
11. Ophthalmology.
12. Laryngology and rhinology.
13. Ætiology.
14. Dermatology and syphilography.
15. General hygiene and demography.
16. Marine hygiene and quarantines.
17. Orthopedic surgery.
18. Mental diseases and diseases of the nervous system.
19. Dental surgery and diseases of the mouth.
20. Medical pedagogy.
21. Legal medicine.
22. Railroad surgery.

All communications should be directed to Dr. Tomas V. Coronado, Secretary of the Committee on Organization of the Third Pan-American Medical Congress, Prado 105, Havana, Cuba.—Revista de Médecina y Cirurgia de la Habana, September 25, 1900.

EDITOR'S TABLE.

SANITARIAN, DECEMBER, 1900.

☞All correspondence and exchanges, and all publications for review, should be addressed to the Editor, Dr. A. N. Bell, 337 Clinton Street, Brooklyn, N. Y.

DR. BAKER AND THE MICHIGAN STATE BOARD OF HEALTH.

The unexpected has not yet happened—the supplanting of Dr. Baker as secretary—to the date of the latest information at the time of closing this number.

Attention is invited to Dr. Baker's manly reply to the request for his resignation on another page. It still appears to us inconceivable that the board will persist in its purpose to supplant Dr. Baker, since it has taken time to sound public opinion on the subject. But there are doubtless a few other people in Michigan besides the new members of the State Board of Health, who are so lacking in knowledge of the work of Dr. Baker that, like the proverbial flies on the hub of the wheel, they think that they are the power—since they have gained the perch for an outlook—which should have the credit for the great life-saving processes of Dr. Baker's devising, by which Michigan has gained the rank of being among the foremost States in the Union for the protection of the public health.

SANITARIUM TREATMENT OF CONSUMPTIVES.

At the annual meeting of the National Sanitarium Association, at Toronto, Nov. 3, the third annual report of the work in the Muskoka Cottage Sanitarium was presented, with most gratifying results. This institution was opened only three years ago, and already 371 patients have been received, of whom 47 are still under treatment. The great benefits of the system are shown by the following satisfactory figures: Number discharged apparently cured, 37; with disease arrested, 95; with marked improvement, 76. Generally speaking, the patients have not remained long enough to reap the full benefits of the Sanitarium; but the average stay has increased each year, and this year amounted to 129 days. With a longer period of treatment, there is no doubt that the results would be still more decided. Local physicians frequently advise those entering the institution to remain for a month or six weeks only. By the end of that period the more alarming symptoms may have subsided and the patient leaves the sanitarium before a permanent

benefit has been obtained. This is one of the adverse conditions which prevent the attainment of the results toward which the management is steadily aiming.

At the beginning of the hospital year on Oct. 1, 1899, 48 patients were present, and during the year 141 more have been admitted, making a total of 189 on the books. Of these 43 were from the city of Toronto, 130 from other parts of Ontario, 4 from other provinces of Canada, and 12 from the United States. Out of the total, 122 patients remained in the institution over 3 months, and of these 109 gained in weight, 6 lost in weight, and 7 neither gained nor lost.

The German Institutions.

A letter was read from Dr. J. H. Elliott, Medical Superintendent of the Muskoka cottages, who has been spending a year in Europe to study the methods pursued there. Writing from Nordrach, Oct. 24, he says:

"I have worked my way thus far into the interior and out of the beaten paths of travel in my visit to the German Sanitaria. I have been in institutions both large and small, for 50 patients and for 200 patients, some placed in hollows with a view only the extent of the lawn, others with endless variety of mountains, valley and river in sight; some have money to back them, others struggling to get along; many of which it is a pleasure to live in, and many which are a disgrace to those in charge. I have seen none equal to ours in the comfort of the patients, or which are as well adapted for keeping them free from dust, or which have a site as excellent as ours.

"The one part of the German Sanitaria which attracts our attention is the extensive plant for lighting, disinfection, heating and laundry, and their complete and huge kitchen appliances. With many of them more attention has been paid to this part than to the dining room and the patients' rooms. All are lighted by electricity—a separate machine house for all the plant away from the patients—and have large accumulations for supplying the light throughout the night when necessary, for lighting any dark passages and for supplying power for laundry plant during the day.

"Connected with huge pressure boilers is a large disinfection boiler—a steam chest for disinfecting the mattresses and clothing under super-heated steam—a most excellent idea, and something we should have if we have our new power house in the near future.

"What a time one would have in endeavoring to treat Canadian patients along the same lines as the Germans treat theirs, who pay three and a half to five marks per day. The gates are locked, no one is allowed in or out without permission; they are fed on boiled pork, half-cooked ham and vegetables; men and women are never allowed together, and many other minor points. And on the three and a half to five marks a day they have to eat off a linoleum-covered pine table, sit on pine chairs or benches, use the cheapest cutlery and thickest possible cups with no handles. But Germans seem accustomed to it.

"It is very rare to find a room in a Sanitarium with an oiled floor; linoleum seems everywhere in use, both in sick rooms and in the corridors. It is expensive, but wears well. In some of the institutions this is no doubt due to the stringent rule forbidding patients to enter the main hallway with their boots on. On entering the doorway they go into a room on one side, and there take off their boots and put on slippers with thick woollen soles for such time as they are inside.

"As for Nordrach—that much-talked-of place—there is indeed little to see. It is interesting that they have a mountain stream which gives power for lighting, and with two new turbines they have sufficient extra power to utilize electricity for heating some of the rooms. But at $22.50 per week, nursing and laundry extra, one should be able to have a good plant, especially with such cheap and poor buildings."

THE SPREAD OF YELLOW FEVER BY MOSQUITOES.

The gist of the recent investigations of the relation of mosquitoes to yellow fever is that the mosquito having bitten a person ill with yellow fever may by subsequently biting a well person susceptible to the disease, communicate the infection. A typical case ("Etiology of Yellow Fever," on another page):

"Dr. Carroll was bitten at 2 p. m. Aug. 27, 1900, by Culex fasciatus. This particular mosquito had bitten a severe case of yellow fever on the second day of the disease twelve days before; a mild case of yellow fever on the first day of the attack, six days preceding; a severe case of yellow fever on the second day of the attack four days before, and a mild case of yellow fever on the second day of attack two days before inoculation."

Dr. Carroll remained well until the afternoon of Aug. 29, when he was overcome by lassitude, and developed a very severe case of yellow fever.

An American, twenty-four years old, resident in Cuba, was bitten on the forenoon of Aug. 31 by the same mosquito that had bitten Dr. Carroll four days before. He also contracted a very severe case of the fever."

Dr. Finlay, of Havana (special cable to New York "Sun," Havana, No. 2), says that between the years 1881 and 1898 he inoculated 104 non-immunes with yellow fever by allowing them to be bitten by mosquitoes which had previously bitten a patient suffering from yellow fever. Of the 104 persons so treated 17 had the disease in a mild but recognizable form. He claims to have been first to discover the agency of mosquitoes in the spread of yellow fever.

MORTALITY AND MORBILITY REPORTS AND REVIEWS.

State of New York: The sanitary districts into which the State is divided are as follows: *Maritime District,* includes New York, Brooklyn, Long Island, Staten Island and Westchester County; *Hudson Valley District,* all the counties on either side of the Hudson River, except Westchester to and including Albany and Rensselaer; *Adirondack and Northern District,* the northern section of the State, the counties of Washington, Warren, Hamilton, Essex, Clinton, Franklin, St. Lawrence, Jefferson and Lewis; *Mohawk Valley District,* Schenectady, Schoharie, Saratoga, Montgomery, Fulton, Herkimer and Oneida counties; *Southern Tier District,* the seven counties along the southern border of the State; *East Central District,* Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga and Cortland counties; *West Central District,* Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee and Wyoming counties; *Lake Ontario and Western District,* Oswego, Wayne, Monroe, Orleans, Niagara and Erie counties.

The State Broad of Health Bulletin for September, 1900, reports the number of deaths for the month to be 10,251—796 less than the preceding month, the death rate having decreased from 18.5 to 16.5.

Maritime District, 3,935,000: Total deaths, 5,600; death rate, 17.3; deaths under five years, 2,308; zymotic diseases, per 1,000 from all causes, 180; from cerebro-spinal meningitis, 21; typhoid fever, 109; malarial diseases, 31; scarlet fever, 9; measles, 16; srysipelas, 10; whooping cough, 32; croup and diphtheria, 93; diarrhœal diseases, 691; acute lung diseases, 456; consumption, 601; cancer, 200.

City of New York, 3,654,594: Total deaths, 5,600; death rate, 19.4; deaths under five years, 2,187; from cerebro- spinal meningitis, 21; tyhpoid fever, 104; malarial diseases, 27; scarlet fever, 9; measles, 16; erysipelas, 10; whooping cough, 30; croup and diphtheria, 89; diarrhœal diseases, 624; acute lung diseases, 439; consumption, 582; cancer, 139.

Borough of Manhattan, 2,007,241: Total deaths, 2,779; death rate, 16.8; deaths under five years, 1,191; from cerebro-spinal meningitis, 15; typhoid fever, 53; malarial diseases, 3; scarlet fever, 8; erysipelas, 4; whooping cough, 20; croup and diphtheria, 37; diarrhœal diseases, 348; acute lung diseases, 264; consumption, 285; cancer, 111.

Borough of the Bronx, 174,370: Total deaths, 328; death rate, 22.8; deaths under five years, 99; from cerebro-spinal meningitis, 1; typhoid fever, 3; malarial diseases, 7; scarlet fever, 1; measles, 1; erysipelas, 1; whooping cough, 1; croup and diphtheria, 5; diarrhœal diseases, 22; acute lung diseases, 19; consumption, 85; cancer, 10.

Borough of Brooklyn, 1,267,258: Total deaths, 1,791; death rate, 17.3; deaths under five years, 776; from cerebro-spinal meningitis, 5; typhoid fever, 38; malarial diseases, 6; measles, 15; erysipelas, 4; whooping cough, 9; croup and diphtheria, 43; diarrhœal diseases, 224; acute lung diseases, 142; consumption, 165; cancer, 55.

The cultivation of tyhpoid fever, as recently discovered at the Disciplinary Training School of this Borough, is attributable to the neglect of the health officials, whose duty it is to have such oversight of institutions of that character, as to prevent such occurrences. *After the outbreak*—due to the criminal negligence of, or purblindness to, the conditions—the health authorities made a personal inspection.

A properly organized and faithfully conducted sanitary inspection service would never incur such disgrace.

Borough of Queens, 136,559: Total deaths, 213; death rate, 19.0; deaths under five years, 79; from typhoid fever, 5; malarial diseases, 11; erysipelas, 1; croup and diphtheria, 1; diarrhœal diseases, 18; acute lung diseases, 10; consumption, 16; cancer, 10.

Borough of Richmond, 60,266: Total deaths, 103; death rate, 18.0; deaths under five years, 42; typhoid fever, 5; croup and diphtheria, 3; diarrhœal diseases, 12; acute lung diseases, 4; consumption, 11; cancer, 3.

Hudson Valley District, 700,000: Total deaths, 1,039; death rate, 17.6; deaths under five years, 310; from cerebro-spinal meningitis, 4; typhoid fever, 48; malarial diseases, 5; scarlet fever, 2; measles, 1; erysipelas,2 ; whooping cough, 9; croup and diphtheria, 22; diarrhœal diseases, 180; acute lung diseases, 51; consumption, 96; cancer, 48.

Albany, 100,000: Total deaths, 125; death rate, 15.5; deaths under five years, 23; from typhoid fever, 4; croup and diphtheria, 4; diarrhœal diseases, 5; acute lung diseases, 10; consumption, 14; cancer, 3.

Adirondack and Northern District, 390,000: Total deaths, 495; death rate, 15.4; deaths under five years, 171; from cerebro-spinal meningitis, 4; typhoid fever, 7; measles, 1; whooping cough, 2; croup and diphtheria, 3; diarrhœal diseases, 124; acute lung diseases, 19; consumption, 43; cancer, 26.

Mohawk Valley District, 395,000: Total deaths, 595; death rate, 18.2; deaths under five years, 194; from cerebro-spinal meningitis, 2; typhoid fever, 11; whooping cough, 7; croup and diphtheria, 9; diarrhœal diseases, 111; acute lung diseases, 29; consumption, 54; cancer, 23.

Utica, 55,000: Total deaths, 115; death rate, 26.0; deaths under five years, 47; from whooping cough, 5; croup and diphtheria, 3; diarrhœal diseases, 19; acute lung diseases, 5; consumption, 12; cancer, 2.

Southern Tier District, 425,000: Total deaths, 495; death rate, 14.0; deaths under five years, 132; from typhoid fever, 15; croup and diphtheria, 7; diarrhœal diseases, 110; acute lung diseases, 12; consumption, 33; cancer, 21.

Binghamton, 45,000: Total deaths, 59; deaths under five years, 9; from typhoid fever, 1; croup and diphtheria, 4; diarrhœal diseases, 4; acute lung diseases, 1; consumption, 3; cancer, 3.

Elmira, 40,000: Total deaths, 39; deaths under five years, 11; from whooping cough, 1; diarrhœal diseases, 5; acute lung diseases, 1; consumption, 2; cancer, 5.

East Central District, 415,000: Total deaths, 537; death rate, 16.0; deaths under five years, 150; from cerebro-spinal meningitis, 1; typhoid fever, 21; malarial diseases, 1; croup and diphtheria, 2; diarrhœal diseases, 132; acute lung diseases, 19; consumption, 39; cancer, 25.

Syracuse, 120,000: Total deaths, 142; death rate, 14.4; deaths under five years, 150; from typhoid fever, 9; croup and diph-

theria, 2; diarrhœal diseases, 22; acute lung diseases, 7; consumption, 19; cancer, 9.

West Central District, 325,000: Total deaths, 418; death rate, 15 per cent.; deaths under five years, 111; from cerebro-spinal meningitis, 4; typhoid fever, 11; whooping cough, 6; croup and diphtheria, 6; diarrhœal diseases, 100; acute lung diseases, 11; consumption, 30; cancer, 17.

Lake Ontario and Western District, 890,000: Total deaths, 1,072; death rate, 14.5; deaths under five years, 383; from cerebro-spinal meningitis, 5; typhoid fever, 23; malarial fever, 1; scarlet fever, 1; measles, 1; whooping cough, 8; croup and diphtheria, 12; diarrhœal diseases, 208; acute lung diseases, 48; consumption, 84; cancer, 45.

Buffalo, 370,000: Total deaths, 437; death rate, 14.9; deaths under five years, 188; from cerebro-spinal meningitis, 3; typhoid fever, 12; scarlet fever, 1; whooping cough, 2; croup and diphtheria, 12; diarrhœal diseases, 100; acute lung diseases, 27; consumption, 38; cancer, 17.

Rochester, 180,000: Total deaths, 172; death rate, 12.9; deaths under five years, 56; from typhoid fever, 2; measles, 1; whooping cough, 4; croup and diphtheria, 3; diarrhœal diseases, 20; acute lung diseases, 5; consumption, 17; cancer, 7.

CALIFORNIA.—Thorough investigation and recent developments abundantly establish the existence of plague in Chinatown, San Francisco, six months ago—and, considering recent reports, probably ever since—three cases having been reported in October. Nevertheless, the State Board of Health, at its last quarterly meeting, October 17, appears to have committed itself to a denial of the existence of that disease there at any time, by designating Dr. Anderson, at the instance of the Governor, to write an account of it—though he does not believe there was any—for the biennial report of the board.

Los Angeles, 103,000: Total deaths in September, 117; death rate, 13.6; deaths under five years, 17; from cerebro-spinal meningitis, 2; typhoid fever, 4; diphtheria, 1; whooping cough, 1; diarrhœal diseases, 4; acute lung diseases, 2; consumption, 25; cancer, 9.

CONNECTICUT.—The State Board of Health Bulletin reports for September: Total deaths, 1,270, in 167 towns having an aggregate population of 907,779. This was 372 less than in August, 128

more than in September of last year, and 62 more than the average number for the five years preceding. The death rates were 16.8 for the large towns and 16.6 for the small towns. From cerebro-spinal meningitis there were 2 deaths; from typhoid fever, 40; malarial diseases, 16; croup and diphtheria, 11; measles, 2; diarrhœal diseases, 256; acute lung diseases, 46; consumption, 117.

DISTRICT OF COLUMBIA, 278,577. Report for four weeks ending October 27: Total deaths, 428; death rate, 19.9; deaths under five years, 117; from typhoid fever, 22; diphtheria, 7; diarrhœal diseases, 20; acute lung diseases, 28; consumption, 65; cancer, 21.

ILLINOIS.—Chicago ("News"), Nov. 12.—The September, 1900, monthly mortality was 3.5 per cent. lower than the previous average, the October was 5.4 per cent. lower, and for the first ten days of November it has been 18 per cent. lower.

Last week there were only 361 deaths reported from all causes, as against 374 in the record breaking week of June 16, 1900, and 440 in the corresponding week one years ago. The monthly mortality rate of the first ten days of the month is .85 per 1,000, and the annual rate 10.56 per 1,000 of the United States census figures of population.

The low typhoid death rate that has obtained during the last six months still continues—only five deaths from this disease being reported during the week. At the present rate—eight deaths in the first ten days—the total November typhoid mortality will not exceed 24, as against 43 last November and a November average of 70 during the thirty-five years between 1865 and 1899 inclusive. This would imply a reduction of nearly 66 (65.7) per cent. in the typhoid mortality of the first year of the sanitary drainage channel from the previous thirty-five years' average typhoid mortality.

KANSAS.—The Secretary of the State Board reports that during the month of October, 1900, *smallpox* was reported at nine places; in all 27 cases; no deaths.

KENTUCKY.—State Board of Health report, Nov. 9, shows that diseases due to poor ventilation are increasing, as are also typhoid fever, whooping cough and rheumatism. Fourteen cases of smallpox exist in seven counties. Hog cholera exists in the counties of Hancock, Henry, Laporte, Miami, Union, Fayette and Clinton.

LOUISIANA.—New Orleans, 300,000—90,000 colored. Report for September: Total deaths, 491—200 colored; death rates, white, 16.6; colored, 27.7; total, 19.6; from cerebro-spinal fever, 5; typhoid fever, 9; malarial diseases, 28; diphtheria, 4; scarlet fever, 4; smallpox, 4; diarrhœal diseases, 16; acute lung diseases, 31; consumption, 53; cancer, 11.

Local Boards of Health have been organized and parish health officers of Louisiana are as follows:

Acadia—Dr. R. C. Webb, Rayne; Ascension—Dr. J. T. Bringier, Burnside; Assumption—Dr. A. J. Himel, Napoleonville; Avoyelles — Coroner; Bienville — Coroner; Bossier — Coroner; Caddo—Dr. H. C. Coty, Shreveport; Calcasieu—Dr. D. S. Perkins, Sulphur; Caldwell—Coroner; Cameron—Coroner; Catahoula—Coroner; Claiborne — Coroner; Concordia—Coroner; De Soto—Dr. H. C. Stokes, Mansfield; East Baton Rouge—Coroner; East Carroll—Dr. W. E. Long, Atherton; East Feliciana—Dr. A. R. Holcomb, Jackson; Franklin—Dr. C. L. Ramage, Winnsboro; Grant—Coroner; Iberia—Dr. I. T. Rand, Cade; Iberville—Dr. F. J. Kearney, Plaquemine; Jackson—Coroner; Jefferson—Dr. C. Milo Brady, Gretna; Lafayette—Dr. Geo. R. De Laureal, Broussard; Lafourche—Dr. John Gazzo, Raceland; Lincoln—Dr. R. Roberts, Ruston; Livingston—Coroner; Madison—Dr. J. F. Hodge, Tallulah; Morehouse—Coroner; Natchitoches—Dr. J. S. Stephens, Natchitoches; Orleans—Dr. Q. Kohnke, New Orleans; Ouachita—Dr. A. H. Gladden, Monroe; Plaquemines—Dr. V. O. Shayot, Pointe-a-la-Hache; Pointe Coupee—Dr. L. M. Provosty, Newroads; Rapides—Coroner; Red River—Coroner; Richland—Dr. Bress, Rayville; Sabine—Dr. G. M. Mott, Converse; St. Bernard—Dr. L. E. Foudriat, St. Bernard; St. Charles—Dr. D. Bienvenu, Hahnville; St. Helena—Dr. C. M. Reames, Greenburg; St. James—Dr. Numa Himel, Welcome; St. John—Dr. N. J. Simon, Wallace; St. Landry—Dr. B. A. Littell, Opelousas; St. Martin—Coroner; St. Mary—Dr. C. M. Smith, Franklin; St. Tammany—Coroner; Tangipahoa—Coroner; Tensas—Dr. P. L. Bellinger, Waterproof; Terrebonne—Coroner; Union — Coroner; Vermillion — Coroner; Vernon — Coroner; Washington—Coroner; Webster—Dr. T. J. Vance, Minden; West Baton Rouge—Dr. W. M. Levert, Mark; West Carroll—Coroner; West Feliciana—Dr. A. F. Barrow, Bayou Sara; Winn—Coroner.

MAINE.—"Sanitary Inspector" for August: In many of our coast towns where the soil is thin and a stratum of rock not far

below the surface easily conducts polluting matter into the wells, the rule with local Boards of Health and physicians should be absolutely sure disinfection of, not only the discharges from the bowels, but that from the kidneys as well. That can be done by adding a large excess of boiling water, or, in country places, by pouring the material upon sawdust, planer shavings, or other combustible material and cremating it.

MARYLAND.—Baltimore, 541,000. Report for September: Total deaths, 979; death rate, 17.2; deaths under five years, 320; from typhoid fever, 19; diphtheria and croup, 17; scarlet fever, 3; whooping cough, 6; acute lung diseases, 38; consumption, 87.

ELKTON, October 23: *Typhoid fever* prevails to an alarming extent. More than twenty cases now exist, and each day adds to the list. Health Officer Dr. Howard Bratton has advised that all water and milk be boiled before being used.

MASSACHUSETTS. Boston, 560,892. Report for the month of July: Total deaths, 1,024; death rate, 21.9; deaths under five years, 431; from typhoid fever, 8; measles, 7; scarlet fever, 11; croup and diphtheria, 33; diarrhœal diseases, 163; acute lung diseases, 64; consumption, 110; cancer, 35.

Report for the year 1899: The total number of deaths was 11,167. The death rate, as calculated on this population, is 20.12 per 1,000 inhabitants. This rate is more by .03 than that of the previous year, and with one exception the lowest on record. There were 1,444 deaths from zymotic diseases, a decrease of 26 deaths from the same group of the previous year. There were 107 more deaths from diphtheria than in 1898, with a proportionate increase in the number of cases. The percentage of deaths to the number of cases of diphtheria reported was 9.77 as against 10.23 per cent. the preceding year. There were 74 deaths from scarlatina, 41 more deaths than in the preceding year, and 45 less than the average of the five previous years. Typhoid fever caused 165 deaths during the year, 20 less deaths than the preceding year. Seventy-six of the deaths from this cause occurred during the months of August, September and October, and 119 of the whole number died between the ages of 20 and 40 years. There were 33 deaths from measles during the year. The number of deaths of children under five years of age was 3,591, compared with 3,577 for the previous year, showing an increase of 14 deaths. The respiratory diseases are still the most fatal, causing fully 27 per cent. of the whole mortality the past year, as against 25 per cent. in 1898.

Somerville, Oct. 29: Diphtheria is unusually prevalent and increasingly so; 59 cases are scattered throughout the city, thereby necessitating a greater rigidity in the usual precautionary measures than if the cases were confined to a smaller area and a greater difficulty in coping with the disease.

Last year at this time there were but 14 cases for the Board of Health to handle.

An important phase in connection with the increase is that the majority of cases are among school children.

MICHIGAN.—The Secretary of the State Board reports for the month of October, 1900, that diphtheria, remittent fever, scarlet fever, pneumonia, measles and typhoid fever were more prevalent; and cholera infantum, dysentery, cholera morbus, whooping cough and inflammation of the bowels less prevalent.

Of the more dangerous communicable diseases, cerebro-spinal meningitis was reported at 12 places, smallpox at 16 places, whooping cough at 22 places, measles at 34 places, diphtheria at 93 places, scarlet fever at 148 places, consumption at 192 places, and typhoid fever at 349 places.

Reports from all sources show cerebro-spinal meningitis reported present at the same number of places; smallpox at 12 places more; whooping cough at 2 places less, measles at 3 places more, diphtheria at 29 places more, scarlet fever at 42 places more, consumption at 15 places more, and typhoid fever at 87 places more, in the month of October, 1900, when compared with the preceding month.

Deaths reported to the Secretary of State as occurring in Michigan during the month of October, 1900, were 2,817, which corresponds to a death rate of 13.8 per 1,000 population. This number is over 500 less than the number returned for September, showing a large decrease in mortality for the month.

There were 622 deaths of infants under 1 year of age; 234 deaths of children aged 1 to 4 years, inclusive, and 682 deaths of persons aged 65 years and over.

Important causes of deaths were as follows: Pulmonary consumption, 130; other forms of tuberculosis, 48; typhoid fever, 163; diphtheria and croup, 65; scarlet fever, 26; measles, 4; whooping cough, 3; pneumonia, 137; diarrhœal diseases under 5 years of age, 353; cancer, 111; accidents and violence, 145.

There was a slight decrease in the number of deaths returned from pulmonary diseases, and a considerable increase in the num-

ber of deaths from typhoid fever, an increase from diphtheria and croup, scarlet fever and pneumonia, and a very large decrease in the number of deaths from diarrhœal diseases as compared with the preceding month. There was one death from smallpox.

RESOLUTION REQUESTING THE RESIGNATION OF HENRY D. BAKER, SECRETARY OF THE STATE BOARD OF HEALTH, AND HIS RESPONSE.

STATE BOARD OF HEALTH, MICHIGAN,
Office of Secretary,
LANSING, Oct. 9, 1900.

HON. FRANK WELLS, President State Board of Health, Lansing, Michigan.

DEAR SIR: At the evening session of the meeting of the Board, Oct. 12, 1900, four members besides the secretary were present, as follows: Dr. Fred R. Belknap, of Niles; Dr. Collins H. Johnston, of Grand Rapids; Dr. D. A. MacLachlan, of Detroit, and Judge A. V. McAlvay, of Manistee.

The following resolution offered by Judge McAlvay, of Manistee, was adopted:

"*Resolved,* That the Secretary of this Board, Henry B. Baker, be and is hereby requested to tender to this Board his resignation as such Secretary, to take effect Jan. 1, 1901, and that such resignation be placed by him in the hands of the President of this Board on or before Nov. 10, 1900, and that the President is hereby directed on said last mentioned date to notify each member of this Board whether such resignation has been received by him."

No reason for this action was mentioned. Judge McAlvay stated that he presented the resolution at the unanimous request of all the members of the Board attending this meeting except Hon. Frank Wells, the President of the Board. Professor Delos Fall was not present.

In considering what action I should take, I have endeavored to be governed first by the effect such action would, in my judgment, have upon the public health interests of the State; because, however strong may be my sense of personal injury which the resolution causes, I recognize the fact that the interests of the people, which every member of the board is bound to regard, are paramount to those of any individual. As you know, I have been the executive officer of this board since its creation over twenty-seven years ago, and as such officer and one of its members, have been identified with its several methods of acquiring knowledge con-

cerning public health subjects and matters, and of the spreading of that information among the people. During all this period it has been my duty, also, as the executive representative of the board to see that, so far as lay in my power, the health laws of the State were faithfully executed by local health boards, health officers, physicians and householders. All the active work of the board has been conducted through the office of the secretary and under my direct supervision. The success of this work has been made possible by the thorough accord which has, up to a recent time, existed between the members of the board and myself. There is nothing in the resolution requesting my resignation to indicate whether the request is made because that accord does not now exist, and it is claimed that the secretary of this board has been derelict in his duty, and has in some manner acted contrary to the instructions or wishes of the board, or whether it is desired simply that I give way to another. The resolution leads naturally to the belief among health officers, physicians and others who are in any way affected by the activities of the board, that these activities are misdirected, and the methods of the board as carried out by the secretary are radically wrong—that the secretary is guilty of some kind of personal or official misfeasance or malfeasance. To comply with the resolution would, it seems to me, tend to make this belief a certainty in the minds of all who have to do with or are interested in public health work. I think that this would have an injurious influence upon this kind of work, and tend to impair seriously the cumulative value of the many years of successful work of this board.

It is conceded by nearly all sanitarians not only in Michigan, but also by those of other States and countries, that the history of the Michigan State Board of Health is one of unparalleled success and usefulness. During its career its councils and work have been enriched by the knowledge and labors of such men as Kedzie, Hitchcock, Lyster, Kellogg, Vaughan, Novy, and many others distinguished as educators, legislators, physicians and sanitarians. It affords me great pleasure to know that all these who have served as members of this board, together with large numbers of public health workers in this and other States and countries, have by their words not only expressed confidence in the judgment and fidelity of the secretary of this board, but not infrequently praise for his labors. While it is natural to overestimate the value of one's own work and to be oblivious to one's own mistakes, yet

the opinion of intelligent contemporaries may be depended upon to supply a just estimate of such services. Judged by this standard alone, I can confidently appeal to correspondence, public expressions, and to the records of this office from the organization of the board to the present time, to show that in the opinion of its members during all this period the duties of its secretary have been performed in a manner to meet their approval.

With such evidence to reinforce my own convictions that I have been faithful to the trust so long reposed in me, I cannot believe that the motives of the four members of the board favoring this resolution are inspired by a belief that I have failed in the performance of my official duties. Fully conscious that I have not been guilty of a departure from a strict and honest performance of these duties, and that my health and strength are unimpaired, I feel that I have never been better prepared for continuing the work to which I have devoted thirty years of my life than I am at the present time. After study and labor to best fit myself for public health work, and with many measures in these interests carefully planned and laboriously prepared for, to close my work now seems a waste in public economy. Under these conditions it seems to me that my resignation, even if desirable to me, would seriously jeopardize the health interests of the State; and if offered in compliance with a request which assigns no cause for such a step, my resignation would certainly imply that I knew that just cause existed, and would leave it to be inferred that it was not stated out of regard to my feelings. This not being true it would be wrong for me thus to promote the infliction of an irreparable injury to my own reputation. I cannot but think that the action requested would result in an injustice to myself too unreasonable to be asked of any man who is conscious of innocence.

In view of the foregoing facts, it seems proper that I respectfully decline to comply with the resolution passed by members of this board asking me to resign the office of Secretary of the Michigan State Board of Health.

With the assurance of my profound respect,

Yours truly,

HENRY D. BAKER, Secretary.

MINNESOTA.—St. Paul, 165,000. Report for September: Total deaths, 144; death rate, 10.4; deaths under five years, 46; from typhoid fever, 6; diphtheria, 3; acute lung diseases, 8; consumption, 21; cancer, 11.

MISSISSIPPI.—Twelve cases of *yellow fever,* with seven deaths, were reported at Natchez from about the middle of October; date of report of latest case at the time of this writing (Nov. 17). The source of the infection is as yet wholly unaccounted for by the inspectors of the State Board of Health and Marine Hospital Service.

MONTANA.—Great Falls, Nov. 3. Dr. A. F. Longeway, the Health Officer of Cascade county, has been devoting much time to securing support to a petition having for its object the creation of a State Board of Health, with power to devise ways and means for stamping out of smallpox or any other contagion that might find a foothold within the borders of the State of Montana, as well as to prevent the spread of such diseases by quarantining infected districts, or by other effective measures.

The petition has been circulated very thoroughly through the various counties of the State, and has been signed by the Boards of County Commissioners generally, by municipal officers of every town and city to which it has been presented, and by all persons in authority everywhere. Its indorsement by the Governor will be sought during the coming week, who, it is believed, has the power to create a State Board of Health. If it is determined, however, that the power does not lie with the Governor, the petition will be presented by the Legislature at its next meeting.

NEW JERSEY.—Newark, 250,000. Report for three weeks ending October 27: Total deaths, 225; death rate, 15.5; deaths under five years, 121; from typhoid fever, 6; scarlet fever, 1; diphtheria, 8; diarrhœal diseases, 13; acute lung diseases, 23; consumption, 29; cancer, 8.

Paterson, 105,843. Report for September: Total deaths, 151; death rate, 17.1; deaths under five years, 63; from croup and diphtheria, 3; typhoid fever, 6; malarial fever, 2; diarrhœal diseases, 19; acute lung diseases, 7; consumption, 26; cancer, 7.

Camden, Oct. 29.—Diphtheria is alarmingly prevalent; 53 cases of the disease had been reported Oct. 27. Dean Mulligan announced to-day that he had closed the big parochial school connected with St. Mary's Roman Catholic Church. Other parochial and ten public schools were urged to follow his example.

NORTH CAROLINA.—The State Board of Health Bulletin reports for September, from eighteen towns with an aggregate population of 127,450—52,024 colored, 191 deaths, of which 104 were

colored; the death rates were, whites, 13.8; colored, 24.0; total, 18.0; deaths under five years, 82—50 colored; from typhoid fever, 5; malarial fever, 15; diphtheria, 1; pneumonia, 5; consumption, 14; diarrhœal diseases, 29; all others, 122.

OHIO.—Cleveland, 395,000. Report for September: Total deaths, 438; death rate, 13.2; deaths under five years, 204; from typhoid fever, 15; scarlet fever, 1; croup and diphtheria, 9; diarrhœal diseases, 57; acute lung diseases, 33; consumption, 24; cancer, 18.

PENNSYLVANIA.—Philadelphia, 1,293,697. Report for four weeks ending October 27: Total deaths, 1,434; death rate, 14.3; deaths under five years, 426; from typhoid fever, 29; croup and diphtheria, 81; malarial diseases, 6; scarlet fever, 3; diarrhœal diseases, 38; acute lung diseases, 121; consumption, 201; cancer, 48.

Pittsburg, 321,616. Report for four weeks ending Oct. 27: Total deaths, 373; death rate, 14.9; deaths under five years, 135; from typhoid fever, 25; scarlet fever, 3; croup and diphtheria, 13; diarrhœal diseases, 9; acute lung diseases, 43; consumption, 17; cancer, 23.

Typhoid fever is reported prevalent in Franklin, Allentown, Johnstown and Williamsport.

RHODE ISLAND.—Newport, Oct. 29.—The typhoid fever, which continues prevalent, is reported to have been traced to an old well, an *alias* for the "health" committee of the Board of Aldermen. A wise movement has been set on foot (Newport "News," Oct. 20) through the medium of petitions now in circulation, for the establishment in this city of a medical Board of Health, with full powers to plan and to execute its plans for the preservation of the health of the community and the prevention of such epidemics of disease as that with which the city has recently been threatened. It goes without saying that so vital a matter as the health and lives of our citizens cannot safely be intrusted to the care of any except experts in matters of sanitation, and that no civil Board of Health, composed of laymen, however intelligent and painstaking in its labors, can possibly render as good service in this all-important line as a board made up of physicians of recognized standing in their profession.

Of course, if a city is to have a medical Board of Health it should give such a board full authority, under proper legal re-

strictions, to carry into effect the measures which it may from time to time deem necessary to ward off disease and protect the interests of the people committed to its care—otherwise its creation would be only a farce and it would better never have an existence as a mere ornamental official appendage. By all means let Newport have such a Board of Health as is now asked for and as she ought long ago to have had, and let it be the very best which can be obtained.

UTAH.—Salt Lake City, 70,000. Report for September: Total deaths, 58; death rate, 13.1; deaths under five years, 25; from typhoid fever, 2; diarrhœal diseases, 7; acute lung diseases, 4; consumption, 1; cancer, 1.

VIRGINIA. The monthly bulletin of the Virginia Board of Health, just to hand (Richmond "Dispatch") Nov. 8, Dr. P. A. Irving traces the history of the board through many years when it could barely sustain itself, but says since the enactment of the new law the board, with its increased appropriation, has widened and enlarged its scope of work. He adds:

It is now prepared to make urinary analyses, examination of pathological specimens, such as sputa, membranes, blood and tumors, as an aid to the diagnosis and treatment of certain contagious and infectious diseases. It is also ready to lend its assistance in determining the cause and the source of an outbreak of typhoid or other continued fevers, such as an investigation of premises, chemical and bacteriological examination of milk, water supply, etc. It supplies vaccine virus for the immediate demands of an outbreak of smallpox until the local authorities can procure what is needed for general vaccination. It will also furnish any of the special serums, such as antitoxin for diphtheria, antipneumococcus for pneumonia, and antistreptococcus for sepsis, to any one who is not able to pay for it, on the request of the attending physician.

WASHINGTON.—Seattle, 90,000. Report for September: Total deaths, 50; death rate, 6.66; deaths under five years, 13; from typhoid fever, 3; whooping cough, 1; diarrhœal diseases, 5; acute lung diseases, 2; consumption, 3.

WISCONSIN.—Milwaukee, 290,000. Report for September: Total deaths, 362; death rate, 15.2; deaths under five years, 172; from typhoid fever, 11; scarlet fever, 2; whooping cough, 6; croup and diphtheria, 10; diarrhœal diseases, 71; acute lung diseases, 23; consumption, 36.

West Superior, Nov. 2.—There are now 200 cases of typhoid fever in this city according to a count made by the Board of Health. Of the 43 deaths reported to the department in October, 15 were caused by typhoid. The large share of these cases did not originate in the city, however, but came from the iron range towns and camps in the woods.

BUENOS AYRES, 806,613. Report for July: Total deaths, 1,388; deaths under five years, 648; from typhoid fever, 11; scarlet fever, 37; measles, 11; whooping cough, 3; croup and diphtheria, 16; smallpox, 6; diarrhœal diseases, 85; acute lung diseases, 364; consumption, 118; cancer, 59.

HAVANA'S YELLOW FEVER CASES.

Special to the "Sun."

HAVANA, Oct. 23.—Sanitary Officer Gorgas has written to the Havana "Post" regarding a statement cabled to the United States by the representative of the Associated Press to the effect that during the last four months there were 1,000 cases of yellow fever officially reported here, and that every block in the city contributed from one to seventeen cases. Dr. Gorgas says that the official records of the chief sanitary officer show that from June 1 to Oct. 19 there were only 789 cases reported. The official maps show that there are 857 square blocks in the city. Of this number 525 have not had a case of the disease.

Dr. Gorgas adds that in any ordinary acceptation of the word epidemic as applied to diseases in great cities this certainly does not show that there is an epidemic here. In a population of 232,000 the average during October, which has been the largest of the year, has been 10 new cases a day. In September there were 72 deaths from consumption, 52 from yellow fever and 43 from enteritis. Yellow fever, therefore, should not be considered epidemic any more than consumption or enteritis.

HAVANA, Nov. 6.—General Wood has informed all the representatives of the steamship firms here that if the yellow fever does not abate, the medical congress, which it is proposed shall be held in Havana, will be transferred elsewhere. The presence of the disease will, it is thought, prevent many tourists from visiting the island, which will entail heavy loss to the steamship companies.

RECENT REPORTS OF PLAGUE.

BREMEN, Nov. 5.—A plague case has apparently developed in Germany. A sailor named Kunze, who arrived here Oct. 27 on board the German steamer Marienburg from South America, has shown suspicious symptoms, and the authorities to-day notified the bacteriological experts to determine whether it is a case of the plague.

WASHINGTON, Nov. 16.—United States Consul General Knight, at Cape Town, has informed the State Deparement that the plague is declared to exist in the interior of the colony. The information was communicated at once to the Marine Hospital Service.

ABSTRACT OF MORTALITY REPORTED ABROAD FOR THE THIRD QUARTER, 1900.

☞ Abbreviations: tm—total mortality; dr—death rate per 1,000 of population, per annum; v—variola (small-pox); m—measles; s—scarlet fever; tf—typhoid fever; d—diphtheria; w—whooping-cough; dd—diarrhœal diseases; bp—bronchitis and pneumonia; pc—pulmonary consumption.

London, 4,589,120: tm, 20,425; dr, 17.8; v, 2; m, 329; s, 70; tf, 162; d, 301; w, 545; dd, 4,268; bp, 1,787; pc, 1,806.

Glasgow, 743,969: tm, 3,502; dr, 18.9; v, 14; m, 100; s, 46; tf, 50; d, 31; w, 173; dd, 307; bp, 545.

Liverpool, 634,780: tm, 3,887; dr, 24.5; v, 7; m, 25; s, 16; tf, 35; d, 28; w, 94; dd, 592.

Manchester, 548,768: tm, 2,987; dr, 21.8; m, 53; s, 23; tf, 14; d, 18; w, 63; dd, 549; bp, 430; pc, 221.

Birmingham, 519,610: tm, 2,672; dr, 20.6; m, 20; s, 24; tf, 31; d, 15; w, 44; dd, 482.

Leeds, 431,287; tm, 2,080; dr, 19.3; m, 53; s, 11; tf, 28; d, 54; w, 20; dd, 377.

Sheffield, 365,922; tm, 2,252; dr, 24.6; m, 21; s, 13; tf, 35; d, 81; w, 75; dd, 472.

Belfast, 359,000: tm, 1,692; dr, 18.9; m, 4; s, 3; tf, 82; d, 9; w, 17; dd, 145; bp, 188; pc, 240.

Dublin, 349,594: tm, 1,960; dr, 22.4; s, 3; tf, 31; d, 16; w, 41; dd, 229; bp, 193; pc, 308.

Bristol, 324,973; tm, 1,148; dr, 14.1; m, 17; s, 11; tf, 5; d, 23; w, 17; dd, 113.

Edinburgh, 302,262; tm, 1,278; dr, 16.9; m, 43; s, 8; tf, 10; d, 19; w, 11; dd, 81; bp, 124; pc, 149.

Bradford, 291,535; tm, 916; dr, 12.6; m, 44; s, 5; tf, 14; d, 60; dd, 60.

Nottingham, 242,656: tm, 1,085; dr, 17.9; m, 11; s, 4; tf, 18; d, 8; w, 37; dd, 191.

Hull, 238,736: tm, 1,235; dr, 20.7; m, 15; s, 11; tf, 15; d, 1; w, 13; dd, 343.

Newcastle, 234,369: tm, 1,122; dr, 19.1; m, 29; s, 3; tf, 5; d, 4; w, 17; dd, 72.

Salford, 220,816: tm, 1,307; dr, 23.7; m, 7; s, 23; tf, 23; d, 32; w, 12; dd, 224.

Leicester, 219,169: tm, 995; dr, 18.2; m, 2; s, 5; tf, 4; d, 100; w, 11; dd, 244.

Portsmouth, 194,955: tm, 840; dr, 17.2; s, 2; tf, 52; d, 19; w, 8; dd, 129.

Cardiff, 194,247: tm, 616; dr, 12.7; m, 9; s, 1; tf, 7; d, 21; w, 12; dd, 62.

Brighton, 124,148: tm, 585; dr, 18.8; m, 33; tf, 3; d, 15; w, 16; dd, 77.

Norwich, 114,855: tm, 487; dr, 17.0; m, 1; tf, 3; d, 4; w, 7; dd, 114.

Plymouth, 102,161: tm, 494; dr, 19.0; m, 4; tf, 3; d, 3; w, 1; dd, 82.

Brussels, 570,844: tm, 2,384; dr, 16.7; v, 1; m. 30; s, 1; tf, 35; d, 3; w, 21; dd, 508; bp, 246; pc, 221;

Amsterdam, 523,743: tm, 1,860; dr, 14.2; m, 19; s, 5; tf, 25; d, 10; w, 29; dd, 7; bp, 202; pc, 206.

Rotterdam, 320,991: tm, 1,342; dr, 16.7; m, 10; s, 4; tf, 14; d, 9; w, 12; d, 7.

Hague, 205,328: tm, 808; dr, 15.7; m, 4; s, 2; d, 1; w, 1

Paris, 2,511,629: tm, 12,469; dr, 19.9; v, 45; m, 194; s, 42; tf, 297; d, 49; w, 63; dd, 1,838; bp, 882; pc, 2,268.

Lille, 222,759: tm, 1,318; dr, 23.7; m, 7; s, 3; tf, 3; d, 5; dd, 533; bp, 75; pc, 160.

St. Etienne, 135,784: tm, 705; dr, 20.8; v, 3; m, 4; s, 2; tf, 21; d, 6; dd, 83; bp, 68; pc, 90.

Roubaix, 124,447: tm, 707; dr, 22.7; tf, 19; d, 4; w, 12; dd, 314; bp, 31; pc, 83.

Havre, 119,470: tm, 1,229; dr, 41.1; m, 16; s, 1; tf, 161; w, 1; dd, 377; bp, 38; pc, 125.

Reims, 107,963: tm, 678; dr, 25.1; m, 18; s, 2; tf, 5; d, 2; w, 1; dd, 240; bp, 23; pc, 61.

Nancy, 99,012: tm, 542; dr, 21.9; m, 14; tf, 7; d, 3; w, 2; dd, 126; bp, 49; pc, 68.

Dunkirk, 39,718: tm, 276; dr, 17.7; m, 4; s, 4; tf, 3; w, 8; dd, 27; bp, 18; pc, 16.

Pau, 33,072; tm, 165; dr, 20.0; m, 1; tf, 5; dd, 21; bp, 12; pc, 13.

Berlin, 1,767,605: tm, 9,738; dr, 22.0; m, 124; s, 136; tf, 40; d, 104; w, 97; dd, 3,190; bp, 525; pc, 961.

Hamburg, 691,349: tm, 3,214; dr, 18.6; m, 18; s, 23; tf, 10; d, 17; w, 44; dd, 653; bp, 276; pc, 277.

Munich, 463,000: tm, 3,104; dr, 26.8; m, 21; s, 1; tf, 6; d, 24; w, 11; dd, 1,159; bp, 158; pc, 38.

Leipzig, 439,233: tm, 2,902; dr, 26.4; m, 1; s, 7; tf, 10; d, 3; dd, 1,276; bp, 214; pc, 206.

Breslau, 406,461: tm, 3,151; dr, 31.0; m, 10; s, 1; tf, 18; d, 7; w, 51; dd, 1,029; bp, 232; pc, 371.

Dresden, 401,400: tm, 2,140; dr, 21.3; m, 10; s, 6; tf, 5; d, 12; w, 4; dd, 605; bp, 118; pc, 195.

Cologne, 362,000: tm, 2,560; dr, 28.3; m, 22; s, 3; tf, 14; d, 4; w, 56; dd, 934; bp, 119; pc, 167.

Frankfort-on-the-M., 257,056: tm, 1,333; dr, 20.7; m, 1; s, 3; tf, 4; d, 9; dd, 345; bp, 122; pc, 149.

Hanover, 241,106: tm, 1,330; dr, 22.1; s, 4; tf, 3; d, 7; dd, 430; bp, 80; pc, 90.

Madgeburg, 225,598: tm, 1,472; dr, 26.1; m, 4; s, 10; tf, 7; d, 6; dd, 586; bp, 111; pc, 96.

Nuremberg, 217,512: tm, 1,903; dr, 34.9; m, 1; s, 2; tf, 4; d, 2; dd, 823; bp, 106; pc, 70.

Dusseldorf, 205,056: tm, 1,186; dr, 23.1; m, 4; s, 5; tf, 4; d, 4; dd, 416; bp, 82; pc, 92.

Charlottenburg, 183,270: tm, 763; dr, 14.8; m, 10; s, 21; d, 10; dd, 59; bp, 124; pc, 69.

Chemnitz, 181,243: tm, 1,315; dr, 16.7; m, 10; s, 16; tf, 1; d, 12; dd, 232; bp, 70; pc, 56.

Stettin, 164,031: tm, 1,995; dr, 50.1; s, 16; tf, 19; d, 8; dd, 1,046 bp, 88; pc, 107.

Stuttgart, 166,417: tm, 701; dr, 17.9; m, 11; s, 1; tf, 1; d, 5; dd, 136; bp, 48; pc, 66.

Altona, 154,164: tm, 822; dr, 21.3; m, 4; s, 13; tf, 6; d, 2; dd, 235; bp, 70; pc, 66.

Bremen, 151,749: tm, 741; dr, 19.5; m, 2; s, 16; tf, 11; d, 1; dd, 191; bp, 57; pc, 96.

Elberfeld, 151,657: tm, 770; dr, 21.3; m, 16; s, 15; tf, 2; d, 9; dd, 246; bp, 62; pc, 66.

Strasburg, 147,009: tm, 957; dr, 26.3; m, 9; s, 1; tf, 6; d, 4; dd, 385; bp, 61; pc, 68.

Barmen, 136,938: tm, 749; dr, 21.9; m, 10; s, 17; tf, 12; d, 6; dd, 247; bp, 77; pc, 71.

Dantzig, 130,431: tm, 1,150; dr, 35.3; m, 3; s, 10; tf, 11; d, 5; dd, 564; bp, 42; pc, 85.

Hallé, 129,717: tm, 1,334; dr, 41.1; m, 1; s, 6; tf, 7; d, 9; dd, 577; bp, 73; pc, 65.

Brunswick, 128,354: tm, 759; dr, 23.7; tf, 4; d, 6; dd, 309; bp, 64; pc, 57.

Essen, 112,496: tm, 796; dr, 28.3; m, 12; s, 51; tf, 4; d, 10; dd, 223; bp, 134; pc, 58.

Crefeld, 108,959: tm, 564; dr, 20.7; s, 2; tf, 4; d, 1; dd, 216; bp, 34; pc, 37.

Mayence, 79,607: tm, 430; dr, 22.9; m, 11; s, 1; tf, 3; d, 6; dd, 85; bp, 40; pc, 54.

Metz, 58,987: tm, 266; dr, 19.7; tf, 4; w, 1; dd, 69; bp, 24; pc, 24.

Berne, 55,472: tm, 258; dr, 18.5; v, 1; m, 14; tf, 1; d, 3; w, 8; dd, 39; bp, 12; pc, 37.

Bâle, 104,724: tm, 445; dr, 17.1; m, 6; tf, 2; d, 5; w, 9; dd, 107; bp, 24; pc, 56.

Geneva, 90,708: tm, 297; dr, 12.9; v, 2; m, 2; tf, 6; d, 1; w, 3; dd, 32; bp, 8; pc, 46.

Lausanne, 44,266: tm, 143; dr, 12.6; m, 1; tf, 2; w, 1; dd, 17; bp, 11; pc, 19.

Zurich, 161,726: tm, 650; dr, 16.0; v, 1; m, 2; tf, 15; d. 7; w, 4; dd, 162; bp, 21; pc, 74.

Vienna, 1,639,811: tm, 7,673; dr, 18.7; m, 87; s, 38; tf, 40; d, 48; w, 50; dd, 1,708; bp, 750; pc, 1,262.

Büda-Pesth, 669,120; tm, 3,458; dr, 20.7; m, 33; s, 59; tf, 28; d, 16; w, 6; dd, 709; bp, 311; pc, 583.

Prague, 385,952: tm, 1,572; dr, 16.3; m, 2; tf, 15; d, 11; w, 8; dd, 80; bp, 131; pc, 329.

Trieste, 167578: tm, 1,164; dr, 27.8; s, 11; tf, 11; d, 12; w, 4; dd, 320; bp, 80; pc, 168.

Gratz, 125,287: tm, 730; dr, 23.3; tf, 3; d, 4; w, 2; bp, 22; pc, 135.

Cracow, 84,869: tm, 665; dr, 31. 4; s, 5; tf, 7; d, 9; w, 3; dd, 89; bp, 61; pc, 147.

Pilsen, 67,218: tm, 342; dr, 24.4; s, 2; tf, 1; d, 2; bp, 24; pc, 65.

Lintz, 53,145: tm, 373; dr, 28.1; m, 2; tf, 2; d, 1; dd, 2; bp, 15; pc, 84.

Copenhagen, 349,000: tm, 1,452; dr, 16.6; m, 1; s, 14; tf, 17; d, 8; w, 9; dd, 282; bp, 88; pc, 178.

Stockholm, 291,580: tm, 1,101; dr, 15.1; m, 1; s, 3; tf, 1; d, 18; w, 21; dd, 174; bp, 110; pc, 145.

Gothenburg, 125,798: tm, 395; dr, 12.6; s, 5; tf, 1; d, 3; w, 5; dd, 51; bp, 19; pc, 103.

Christiania, 221,256: tm, 746; dr, 13.5; m, 13; s, 1; tf, 1; w, 15; dd, 129; bp, 48; pc, 137.

St. Petersburg, 1,132,677: tm, 7,617; dr, 26.9; v, 106; m, 135; s, 140; tf, 263; d, 247; w, 63; dd, 1,981; bp, 174; pc, 760.

Moscow, 1,023,817: tm, 9,099; dr, 35.5; v, 12; m, 204; s, 68; tf, 44; d, 97; w, 40; dd, 3,708; bp, 99; pc, 622.

Warsaw, 601,480: tm, 4,355; dr, 29.0; v, 401; m, 108; s, 87; tf, 34; d, 45; w, 41; dd, 1,453; bp, 487; pc, 335.

Odessa, 426,500: tm, 2,926; dr, 27.4; v, 25; m, 49; s, 59; tf, 75; d, 17; w, 2; dd, 873; pc, 225.

Bucharest, 282,071: tm, 1,564; dr, 22.2; s, 41; tf, 18; d, 34; w, 10; dd, 327; bp, 122; pc, 175.

For the Second Quarter, 1900:

Bordeaux, 206,906: tm, 1,374; dr, 21.3; v, 4; m, 11; s, 3; tf, 9; d, 19; w, 10; dd, 43; bp, 194; pc, 119.

Rouen, 114,817: tm, 780; dr, 27.2; m, 4; tf, 10; d, 10; w, 1; dd, 70; bp, 97; pc, 139.

Nantes, 125,757: tm, 732; dr, 23.4; m, 7; tf, 13; d, 2; w, 1; dd, 27; bp, 18; pc, 167.

Reims, 107,963: tm, 537; dr, 19.9; s, 1; tf, 4; d, 3; w, 3; dd, 32; bp, 51; pc, 81. s

Barmen, 136,968: tm, 694; dr, 20.3; m, 6; s, 5; tf, 10; dd, 121; bp, 122; pc, 83.

Aix-la-Chapelle, 134,196: tm, 732; dr, 22.6; tf, 1; d, 15; dd, 106; bp, 135; pc, 58.

Mannheim, 118,243: tm, 680; dr, 23.0; m, 1; s, 2; tf, 18; dd, 171; bp, 65; pc, 85.

Warsaw, 601,480: tm, 3,289; dr, 21.9; v, 37; m, 20; s, 30; tf, 39; d, 40; w, 30; dd, 224; bp, 646; pc, 441.

Rome, 507,244: tm, 2,224; dr, 17.5; v, 1; m, 72; tf, 18; d, 16; w, 3; dd, 173; bp, 374; pc, 204.

Turin, 344,203: tm, 1,561; dr, 18.1; m, 15; s, 2; tf, 16; d, 6; w, 13; dd, 140; bp, 304; pc, 182.

Genoa, 226,432: tm, 1,143; dr, 20.2; m, 21; s, 1; tf, 15; d, 8; w, 2; dd, 62; bp, 300; pc, 126.

Milan, 494,486: tm, 2,450; dr, 19.8; v, 1; m, 64; s, 27; tf, 40; d, 11; dd, 175; bp, 517; pc, 299.

Bologne, 157,162: tm, 683; dr, 17.4; tf, 3; d, 5; w, 7; dd, 34; bp, 113; pc, 64.

Livourne, 105,767: tm, 502; dr, 19.0; m, 5; tf, 18; d, 2; w, 3; dd, 27; bp, 77; pc, 59.

Madrid, 512,596: tm, 3,861; dr, 30.1; v, 108; m, 298; s, 22; tf, 30; d, 48; w, 1; dd, 370; bp, 947; pc, 481.

Lisbon, 352,594: tm, 1,871; dr, 21.2; m, 29; tf, 12; d, 23; w, 7; dd, 116; bp, 236; pc, 309.

Cairo, 534,677: tm, 6,270; dr, 46.9; v, 60; m, 555; tf, 127; d, 33; w, 16; dd, 1,144; bp, 1,240; pc, 340.

Alexandria, 273,563: tm, 1,990; dr, 29.1; v, 27; m, 2; tf, 29; d, 8; w, 2; dd, 569; bp, 342; pc, 162.

Damietta, 31,285: tm, 268; dr, 26.6; m, 7; tf, 15; d, 1; dd, 38; bp, 31; pc, 11.

Port Said, 30,773: tm, 267; dr, 34.7; v, 2; tf, 1; d, 2; w, 1; dd, 49; bp, 45; pc, 16.

Suez, 19,526: tm, 215; dr, 44.0; d, 2; w, 1; dd, 41; bp, 35; pc, 5.

Bombay, 821,764: tm, 20,932; dr, 101.9; v, 527; m, 336; tf, 6,633; plague, *Cholera,* 535; dd, 2,488.

OBITUARY.

Dr. Edward Robinson Squibb died at his home, 152 Columbia Heights, Brooklyn, October 25, 1900. He was born in Wilmington, Del., July 4, 1819. He received his medical degree from Jefferson Medical College, Philadelphia, in 1846, and was appointed assistant surgeon in the U. S. Navy, in April, 1847. After several years' active service at sea, he was assigned to duty at the chemical laboratory of the Naval Hospital at Brooklyn, assistant to Surgeon B. F. Bache, in charge, and it was there that he acquired his earliest reputation as pharmacist for naval supplies. He resigned from the Navy, December, 1857, and became a manufacturer on his own account in a Western city. But he removed to and settled in Brooklyn about 1859-60. Meanwhile the pro-

ducts of his manufactory were everywhere received with confidence, and were so scrupulously prepared that confidence in them was never forfeited.

On his settlement in Brooklyn he established a small factory on Furman street, which soon proved to be insufficient for the increase of business which followed him. Meanwhile, however, he incurred the misfortune of a fire, which destroyed all his apparatus and well nigh his life, to the end of which he was greatly disfigured. But he was among friends, as men of such sterling character as his are always likely to be. After long confinement as the result of his misfortune, he recovered; took a fresh hold; reconstructed and enlarged his laboratory. The Civil War came on. "No medical supplies were equal to Squibbs'." Orders quickly overran the capacity of his Furman street foundation. A more commodious and thoroughly equipped manufacturing laboratory was quickly erected. He received the patronage he deserved since, and as well as during the war. His pharmaceutical preparations have acquired a standard of excellence that is never questioned. Like his character, of such sterling integrity, as to be absolutely reliable.

Dr. Squibb was married to Miss Caroline F. L. Cook, of Philadelphia in 1852, and she, with his two sons and one daughter, Mrs. John C. Munro, of Philadelphia, survive him. In January, 1892, his two sons were admitted to partnership, and the firm name has since been E. R. Squibb & Sons, the sons being Edward H., M.D., and Charles F.

Originally and before he went into the navy, Dr. Squibb was a member of the Society of Friends, but as his services for the government were looked upon as contrary to the doctrines of the denomination, he withdrew from it. For many years he was a regular attendant of the Holy Trinity Episcopal Church, Brooklyn, where the funeral exercises were conducted. The interment was made in Greenwood Cemetery.

The death of Dr. EUGENE JANSSENS, the distinguished sanitarian of Brussels, October 15, 1900, leaves a void in Belgium. His great love for his profession and his great ability as a sanitarian gave him a reputation in every civilized country in the world. As a statistician and an expert in demography he made of his "Annual Reports" a study for all interested in sanitary subjects, and was always among the most welcome of *Sanitarian's* exchanges.

BOOK REVIEWS.

THE THEORY AND PRACTICE OF HYGIENE. A COMPLETE SYSTEMATIC TREATISE, by J. LANE NOTTER, M.A., M.D., F.C.S. Fellow and Member of the Council of the Sanitary Institute of Great Britain; Examiner in Hygiene and Public Health, University of Cambridge and Royal Colleges of Physicians and Surgeons, etc.; Professor of Hygiene in the Army Medical School, Netley. Second edition, revised and enlarged with the assistance of W. H. Horrocks, M.B., B.Sc. (London), Assistant Professor of Hygiene in the Army Medical School, etc. 15 Lithographic plates and 138 other illustrations. Octavo, 1,085 pages. Cloth, net, $7.00. May be ordered through any bookseller, or upon receipt of price we will send it—express or mail, all charges prepaid—to your address. P. BLAKISTON'S SON & Co., 1012 Walnut street, Philadelphia, Melical and Scientific booksellers.

This book worthily succeeds the long maintained standard work of the late Dr. E. A. Parkes. It is the recognized authority of the Army Medical Services in England and America, and, with the possible exception of the three-volume treatise of Stevenson and Murphy, by the same publishers, is the most complete and exhaustive book on Sanitary Science hitherto published. It is systematically arranged, each subject receiving the space its importance warrants, and each being treated from a practical point of view. The directions for the examinations of water, food, etc., are full, presenting the details at sufficient length to properly acquaint the reader with the necessary methods. Many of the subjects are followed with Bibliography and References very useful to those desiring to make special investigations.

The progress of Sanitary Science during recent years has been such as to require careful revision of much before written, and the author has, in this edition, thoroughly comprehended the recent knowledge and the best methods of procedure in medical sanitation. The latest reports and official papers of the United States Army, Navy, and Marine Hospital Services have all had careful consideration. The contents are arranged succinctly as follows, and considered in detail:

Water—quantity, source, and modes of supply; purification, examination. Air—composition, impurities, examination. Ventilation and Heating—quantity of air required; methods of supply, of heating, of cooling. Examination of Sufficiency of Food—

classification, nutritive function and value, quantity requisite, diseases connective with; meat, fish, eggs, milk and its products, bread, grains, potatoes, sugar, vegetables, etc.; prepared and preserved foods. Beverages and Condiments—beer, wine, spirits, tea, coffee, cocoa, etc.; condiments, lemon and lemon-juice, etc. Clothing—materials, principles of selection and construction. Exercise—effects of, amount, etc. Soil—origin, features, comparison, relation to disease, examination of. Habitations—general conditions, sites, construction, dwellings, schools, hospitals, etc. Disposal of Sewage and Refuse—composition of, methods and treatment of, removal; sewers, comparison of systems. Parasites—classification, special description of various forms. The Infective Diseases—nature, origin, immunity, protection, description of special forms. Disinfection—various methods for special requirements. Climate—effects of, influence upon health, acclimatization, classification of. Meteorology—temperature, sunshine, wind, atmospheric conditions, clouds, humidity, evaporation, rain. Vital Statistics—population, marriage, birth and death rates, occupations, sickness, life tables, statistics, etc. Offensive Trades—each being taken up in systematic order. Sanitary Law—local and general officers; proper regulations of; nuisances; draining, unhealthy areas; lodgings, offensive trades, foods, etc. Military Hygiene—recruits, barracks at home and abroad, huts, tents, arrangement of camps and hospitals; food, work, and duties of the soldier; effects of military service, vital statistics. Marine Hygiene—nature, extent, and sanitary regulations of the marine population, the sailor, the vessel; economy, ventilation, heating, lighting, cleansing, disinfection of ships; water and food supply, disease, accident, and death at sea. Appended are many important and useful tables relating to the whole subject. It is, in short, replete with practical knowledge on preventive medicine in all respects.

STUDIES IN THE PSYCHOLOGY OF SEX. The Evolution of Modesty. The Phenomena of Sexual Periodicity. Auto-Eroticism. By HAVELOCK ELLIS. $6\frac{3}{8} \times 8\frac{1}{4}$ inches. Pages xii-275. Extra cloth, $2.00, net. Sold only to Physicians and Lawyers. F. A. DAVIS COMPANY, Publishers, 1914-16 Cherry street, Philadelphia.

"Sold only to physicians and lawyers," is suggestive of the practical utility of this book. It comprehends three studies into which the subject is divided for elucidation. The first sketches the out-

lines of a complex, emotional state, in its fundamental relations to sexual psychology; the second attempts to bring all the facts bearing upon the subject together from widely different regions; and thirdly, the uncertainty of deductions—"that even in fields where we assume our knowledge to be adequate, a broader view of the phenomena teaches us to suspend judgment and to adopt a more cautious attitude."

Nevertheless, the author has opened up a new field of study by scientific investigation, apart from the hitherto mere speculative appreciation of sexual emotions, as related to the different mental and physical conditions of different individuals, dependent upon the state of health. These studies are well calculated to elucidate sexual perversities with which all observant physicians and scientists are more or less familiar, but have been unable to account for. They are alike commendable to both physicians and lawyers for the promotion of accurate diagnosis and sound law.

JOHNSON'S PHYSICAL CULTURE. PRIMARY BOOK. Price 25 cents. B. F. Johnson Publishing Company, Richmond, Va.

A book of simple, practical directions which come readily to one's hand; evidently the work of a man who has put physical culture where it belongs in his own home, and observed its benefits. The directions for exercises are so simple that a parent can easily take up and continue at home the work which the teacher begins at school. In addition to the exercises there are bright, every-day talks of practical value—some addressed to teachers, others to parents, and others to children. There is a helpful word to mothers; a timely chapter on the model school-house and grounds; chapters on breathing, the use of the hands, fingers, wrists, lower limbs, and joints; talks on how to be straight, on food, drink, cleanliness, care of the hair, eyes, ears, teeth, and feet. And there is a much-needed word on purity of habits and character. Altogether a thoroughly commendable little book of one hundred and twenty pages, appropriately illustrated.

DISINFECTION AND DISINFECTANTS. By H. M. BRACKEN, M.D., Professor of Materia Medica and Therapeutics, University of Minnesota; Secretary of Minnesota State Board of Health. Published by the Trade Periodical Co., Chicago, Ill.

A brochure of eighty-five pages, comprehending a brief description of disinfectants, tests of their effect on disease germs, and how to use them; with illustration of apparatus for their application. And, appended:

Rules for the Transportation of the Dead—Adopted by the American Association of Baggage Agents and approved by the Conference of State and Provincial Boards of Health and the National Funeral Directors' Association.

A useful manual, worthy of extensive circulation.

MICROSCOPICAL REPRODUCTIONS OF THE BLOOD AND BACTERIA. An illustrated brochure of twenty-five pages, recently issued from the Reed & Carnrick laboratories, Jersey City, N. J. It is an important contribution to the study of hæmotology and the production of organic products as remedies in the treatment of disease; above all in the production of protonuclein—"the highest and most exact physiological product derived from the lymphoid structures of the animal organism without the use of chemical agents." It is shown to be the simple preservation of the cellular elements of the organism, so extremely delicate in its combinations that any chemical agent is liable to disturb its cellular activity, excepting under its normal physiological environment.

"This product, therefore, not only contains the nuclein, but also the nuclein-charged multinuclear leucocytes, which are the active agents of nutrition and assimulation, the vital units of the organism, and the normal resistance to toxic agents introduced into the body.

"Its physiological properties consist of increasing the number of leucocytes, thus furnishing the means wherewith to rapidly distribute the nuclein to the various tissues. It is therefore the true tissue-builder of the organism. The nuclein thus distributed by the leucocytes molecularly changes any and all toxic germs, rendering them atoxic by the disturbance thus created, and in this manner becomes the antitoxic agent of the organism, destroying the toxic power of the thousands of germs which enter the organism every moment, and causing them to pass away without inflicting any injury. These facts demonstrate the wide therapeutic range of this physiological product."

CONTEMPORARY LITERATURE.

THE PRESIDENTIAL CAMPAIGN OF 1900.

The REVIEW OF REVIEWS for November marks the culmination of the Presidential campaign of 1900. Its various departments—"The Progress of the World," "Record of Current Events," "Car-

toons," and "Leading Articles of the Month,"—summarize the things worth remembering in connection with the political contests of the year in the United States, Canada, and Great Britain, while contributed articles describe in detail the campaign methods employed in Chicago, New York and London, and the rudimentary party organizations of Porto Rico. Its editorial treatment of current politics has given the "Review" a unique distinction among American magazines.

THE HALL OF FAME for great Americans, which has been given to New York University, and concerning which so much misinformation has got into the newspaper press, is the subject of an authoritative article by Chancellor MacCracken in the November "Review of Reviews." The whole scheme of selection of candidates for this American Valhalla is described in this article, a careful reading of which should remove many misconceptions. Portraits are presented of all the 29 famous Americans chosen on October 10-12 for commemoration in the Hall of Fame, and a view of the edifice itself is given.

THE PROBLEM IN CHINA.

I was standing by when Count von Waldersee came on the field. His uniform was covered with gold, and a broad yellow ribbon was across his chest. In his hand was the field-marshal's bâton presented by the German Emperor just before his departure to take command—a gaudy bit of blue enamel crowned and chased in gold. It was a fine, vigorous face that surmounted his sturdy figure and looked out from under his helmet, and he sat his charger like a youth. A quick inquiry in German, to make sure of the position of the officers waiting to receive him, and he broke from his staff and advanced towards them at a sharp canter. Before them, he pulled his horse up with the ease of a practised rider, and saluted with his bâton. After passing down the line of troops with his staff, he moved to another part of the grounds and reviewed the troops as they marched past. He must have felt as he watched them the extraordinary nature of the situation before him, and the difficulties of the task he has to face. The Germans, going by to fife and drum with the precision of a machine, are all right; he knows them. But the French, preceded by their bugles, now so friendly, what of them? What difficulties and imbroglios with those officers on the puny ponies and those slightly straggling ranks does the future hold. And those close-knit, business-like columns of brown men with their bagpipes,

those quick-moving little Japs, and that Northern Cloud, unrepresented here, but all-important, what are they to be? All these questions must have passed through his mind as he sat there gravely watching the motley thousands pass. And what are they to be? The scene has been set, the actors are on the stage, the prologue has been played. The play is beginning. What it is, tragedy or comedy, farce, melodrama or opera-bouffe, the aroused interest of the spectators waits breathless to see.—George P. Dyer, U. S. N., in "Harper's Weekly."

THE CENTURY.

The November "Century," beginning the magazine's thirty-first year, is the first of two numbers especially noteworthy, not only for the interest of their contents, but for the beauty and abundance of their illustrations. The rich effects of color printing are seen in the pictures illustrating an outdoor paper by Maurice Thompson, in which the reader is transported to the shores of the Gulf of Mexico, and in three full-page reproductions of the work of "A New Sculptor," Hendrick Christian Andersen. But while the eye will be caught first by the pictorial features of the number, its appeal to the mind is no less strong; for with November the "Century" begins a Year of Romance, in the course of which it will present a remarkable number of short stories by famous writers, with several longer ones, and two or three serials running through six months or more.

A MOUNTAIN LOVER.

Much of novelty and charm are promised in behalf of Hamlin Garland's new serial, which begins in the November "Century." It is a love story, recording "an international entanglement," and some idea of its character may be guessed from the opening scene.

The young miner uttered a shout of protest.

"Say, now, Doc, don't do that. What could I do in London? Why, they'd sure eat me up there. I can't even count their durn money. I won't do it. That's askin' too much of a pardner."

The Chicago member of the firm smiled. "Jim, you're taking on too much worry. They're a slow going lot over there. You'll have plenty of time to count your change while they're getting out o' their chairs. The question is, have we a good property or not?"

"Property's all right, but——"

"Do we need money, or don't we?"

"Yes. But suppose I don't——"

"You've *got to.* That mine, properly handled, is worth five hundred thousand dollars, and the thing for you to do is to interest some English 'sport' who has money to throw at the cats, and get him to take a half-interest and help us develop the property."

"But see here, Doc; I was raised in the hills. I can't paddle a stone-boat. It makes me seasick to see a girl shake a tablecloth. I can't go over there in a boat."

"You can't walk."

"A Pullman's good enough for me. I guess I'll put off going to Europe till I can go by train." The young fellow left his chair, and began pacing the office floor. "See here, Doc; I don't want to gigg back—I'm a sure-'nough pardner. Say the word, and I'll jump a cayuse and back him clear to the Yukon Valley; but this going to England in a boat makes my fur bristle; it does for sure."

The doctor, turning his noiseless swivel-chair, followed his partner with amused glance. "Jim, the thing is settled. It wouldn't do to send a 'slick one' on such business. You're the man. The tone of your voice carries conviction. You got me to go into a hole when no one could win a nickel out o' my pocket with the best dirt in the pan. My going is out of the question. It wouldn't do to leave Mary and the babies, and, besides, I've got to hold on to my practice here till you make a raise. You remember I've kept the thing going now for two years."

The younger man's handsome face grew tender. "That's the God's truth, Doc. It's time I made a break. The stuff is in there, all right, all right, and we've got to have help to get it out. When had I better start?"

ST. NICHOLAS.

No one who does not see "St. Nicholas" can realize what an interesting magazine it is, and how exquisitely it is illustrated; it is a surprise to young and old. Of literature it contains the choicest, and in art it has never been surpassed by any grown folks' periodical. The new volume begins with November, 1900, and the subscription price is $3.00 a year. The Century Co., Union Square, New York.

A BAD BOY IN 1380.

Mrs. Joseph Pennell writes in the November "St. Nicholas" of "Children and Courtesy Four Hundred Years Ago," and incidentally tells of a bad boy of the fourteenth century.

There was a writer called Lydgate, she says, who lived just about the time some of the books of curtesie were composed, and who wrote a poem, confessing his wickedness as a boy, that gives us a better idea of what went on even then. Lydgate, it seems, was not sent to a noble's house, but was brought up by the monks and went to one of their schools. He says that until he was fifteen he loved no work but play; I think I have heard of boys to-day who have exactly his taste in the matter. He was afraid of the rod, naturally, for it was never spared when he was a child. Little girls were then taught to look upon "sharp and severe parents" as the greatest benefit they could receive, and there is the record of one, Elizabeth Paston by name, who was beaten once or twice a week, sometimes twice a day, and on one occasion had her head broken in two or three places. Poor little thing! If this is the way the girls were treated you can imagine the fate of the boys. But, fear the rod as he might, Lydgate was still late at school; he talked when he ought to have been studying; he told stories to get out of scrapes; he made fun of his masters; he stole apples and grapes; oh, dear! oh, dear!—he liked counting cherry-stones better than church; he wouldn't get up in the morning; he wouldn't wash his hands before dinner; he pretended to be ill when he wasn't; he never thought of anybody when there was a question of his own pleasure; and, altogether, he was about as bad a boy as could be found from one end of England to the other. I don't believe our old friend Frederick, who did so many naughty things in the nursery rhyme, was one bit worse. But, that bad boys may take heart and know that there is hope, I must add that Lydgate grew up to be a great man, whose reputation has lasted to our day, and that he wrote many poems, among them this confession of the apple-stealing and truant-playing of his school-days.

CHAUCER.

It is just five hundred years since the muse of Geoffrey Chaucer —the father of English poetry—was silenced by death, and the thoughts of those who have been enriched by the literary treasures of the English tongue now turn to the author of the immortal "Canterbury Tales." Very timely, therefore, is the article on Chaucer which is contributed to the November number of the "North American Review," by John W. Hales, Professor of English Literature in King's College, London. Professor Hales gives a very vivid picture of the poet in his character and in his

circumstances, illustrating his theme by quotations from the poems which seem to contain personal reference to the man who wrote them. Alluding to some of Chaucer's work, which appears to be open to the charge of grossness, Professor Hales says:

"It can be most truly asserted that the general tone of his work is healthy and health-giving, and that, in judging of certain grossnesses that offend the modern reader, we must carefully take into account both the manners of his age, and his creed and principles as an artist. Once on a time, men were naked and not ashamed; and that time had not entirely passed way when Chaucer wrote. He is at times frankly and simply natural; but he cannot be accused of deliberate and lingering sensuality. He takes men as he finds them, and does not shrink from portraying the coarse as well as the refined. He knows that all sorts go to the making of the world, and he paints all sorts. But he never forgets that a villain is a villain; and no one has given more sympathetic pictures of what is liberal, noble, chivalrous.

CARE OF THE VOICE.

The culture and training of the voice is one of the best means of promoting the general health. This is due mainly to the formation of correct habits of breathing. One cannot sing or speak well without understanding the action of the lungs. These have been likened, in their importance and use to the vocal cords, to the bellows of the organ. The lungs are never emptied of air in breathing. In ordinary breathing very little of the air that fills them is displaced. In forced expiration, such as accompanies singing, the old, "residual air," as it is called, is forced out, and replaced by fresh air. This in turn stimulates the circulation, and thus the whole processes of the body are helped and vitalized.

The greatest injury is done to the delicate mechanism of the larynx by frequent colds. The vocal cords are thickened and inflamed, and sometimes injured beyond repair by these repeated inflammations, many of which occur in childhood. One should not be over-whimsical about draughts, but it is true that they are injurious to the vocal cords. The latter are also very susceptible to the evil influences of irritating conditions. Air laden with impurities, such as smoke or dust, passing through the narrow passage formed by the vocal cords leaves its deleterious impress upon them.—Dr. Grace Peckham Murray, in "Harper's Bazar."

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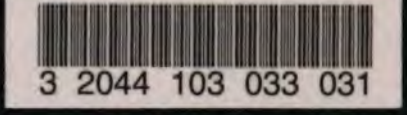
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